

## Questionnaire

The questionnaire is made-up of ten questions and a comment page. Through the questionnaire, second-home owners were asked to provide information on the location of main residence, influence of decision factors to purchase or build a second-home, second-home ownership, group make-up, second-home visitation in terms of both the number of visits per month and number of days per visit, site visitation at area lakes and reservoirs, summer season visitation and recreation activities at Donner Lake, summer season characteristics of Donner Lake, sensitivity to alternative lake-levels at Donner Lake, expenditures per visit, and annual expenditures on second-home upkeep and repairs. Also through the questionnaire, second-home owners were asked to mention any comments about owning a second-home in the Truckee area. Each of the ten questions and the comment page are presented below.

1. Where is your main residence?

City \_\_\_\_\_  
State \_\_\_\_\_  
Zip Code \_\_\_\_\_

2. How did the following factors influence your decision to purchase or build a second-home in the Truckee area? Please indicate, as a percentage, the level of influence each factor had on your decision. Be sure that the total is equal to 100%.

Decision Factors	Level of Influence %
Business / Job / Retirement	
Financial / Investment / Tax Purposes	
Family / Community / Rural Lifestyle	
Natural Setting / Environment / Climate	
Winter Recreation / Proximity to Ski Areas	
Water-Related Summer Recreation / Proximity to Lakes and Reservoirs	
Other Summer Recreation / Proximity to Golf Courses and Hiking Trails	
Total	100%

3. Do you share ownership of your second-home with others not in your family?

No \_\_\_\_\_  
Yes \_\_\_\_\_

4. How many adults and children are included in a typical visit to your second-home?

Typical Number of Adults per Visit \_\_\_\_\_  
Typical Number of Children per Visit \_\_\_\_\_

5. How many times do you visit your second-home and how many days do you spend per visit during each of the following months?

Months	Typical Number of Visits per Month	Typical Number of Days per Visit
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

6. How many times do you visit Lake Tahoe, Donner Lake, Prosser Reservoir, Stampede Reservoir, Boca Reservoir, and Pyramid Lake for recreation during each of the following months?

Months	Typical Number of Visits per Month					
	Lake Tahoe	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boca Reservoir	Pyramid Lake
April						
May						
June						
July						
August						
September						
October						
November through March						

7. The summer recreation season is comprised of the months of June, July, and August including Memorial Day and Labor Day weekends. During this season: (please answer questions a, b, and c)

- a. How many days per visit to your second-home do you spend on recreation at Donner Lake?

Typical Number of Days per Visit \_\_\_\_\_

- b. How many hours per day do you spend on the following recreation activities at Donner Lake? Please indicate by marking the appropriate box, the number of hours per day for each recreation activity. Extra space is provided for other activities.

Recreation Activities

Typical Number of Hours per Day

Fishing from Shore	0	1	2	3	4	5	6	7	8	9	10	11	12
Fishing from Boat	0	1	2	3	4	5	6	7	8	9	10	11	12
Water Skiing	0	1	2	3	4	5	6	7	8	9	10	11	12
Pleasure Boating	0	1	2	3	4	5	6	7	8	9	10	11	12
Jet Skiing	0	1	2	3	4	5	6	7	8	9	10	11	12
Swimming	0	1	2	3	4	5	6	7	8	9	10	11	12
Picnicing	0	1	2	3	4	5	6	7	8	9	10	11	12
Hiking	0	1	2	3	4	5	6	7	8	9	10	11	12
Biking	0	1	2	3	4	5	6	7	8	9	10	11	12
	0	1	2	3	4	5	6	7	8	9	10	11	12
	0	1	2	3	4	5	6	7	8	9	10	11	12

- c. How do you rate the following characteristics of Donner Lake? Please rate the characteristics as very good, good, satisfactory, poor, or very poor.

Characteristics	Very Good	Good	Satisfactory	Poor	Very Poor
Natural Setting and Environment					
Recreation Opportunities					
Lake-Level					
Boat Ramp and Dock Access					
Crowd Level					
Facilities					

8. The summer recreation season is comprised of the months of June, July, and August including Memorial Day and Labor Day weekends. During this season, the lake-level at Donner Lake is regulated between the following five lake-levels: (please answer questions a, b, and c)

Lake-Levels			Boat Ramp and Boat Dock Status			
Lake-Level	Lake Elevation	Lake Elevation Drop	Public Boat Ramp Status	Tahoe Donner Boat Ramp Status	Donner Lake Property Owner Boat Ramp Status	Public Boat Docks Status
	<i>feet</i>	<i>feet</i>				
1	5,936 maximum	0	usable	usable	usable	usable / safe
2	5,935	1	usable	usable	usable	usable / safe
3	5,934	2	usable	marginal	marginal	marginal
4	5,933	3	usable	unusable	unusable	unusable / unsafe
5	5,932	4	usable	unusable	unusable	unusable / unsafe

- a. Would the number of visits you make during each month to your second-home change at any of the above lake-levels?

No \_\_\_\_\_ (if No, please go to question 9)

Yes \_\_\_\_\_

- b. If Yes, please indicate below, how you would change your number of visits per month to your second-home? At each lake-level, circle whether you would have no change, an increase, or a decrease in the number of visits per month to your second-home. Also indicate the corresponding increase or decrease in the number of visits per month.

Lake- Level	Change in Number of Visits per Month			Increase / Decrease
	Circle One			
1	No Change	Increase	Decrease	
2	No Change	Increase	Decrease	
3	No Change	Increase	Decrease	
4	No Change	Increase	Decrease	
5	No Change	Increase	Decrease	

- c. If Yes, how would you then rate the following characteristics of Donner Lake at the lake-level where you first indicated that you would change the number of visits to your second-home? Please rate the following characteristics as very good, good, satisfactory, poor, or very poor.

Characteristics	Very Good	Good	Satisfactory	Poor	Very Poor
Natural Setting and Environment					
Recreation Opportunities					
Lake-Level					
Boat Ramp and Dock Access					
Crowd Level					
Facilities					

9. The summer recreation season is comprised of the months of June, July, and August including Memorial Day and Labor Day weekends. During this season: (please answer question a)

- a. How much do you spend on the following items per visit to your second-home? Please indicate your expenditure on each item and the portion that you spend in the Truckee-Donner Lake area, Reno-Sparks area, Lake Tahoe area, and Other area. Extra space is provided for other items.

Items	Typical Expenditure per Visit  \$	Truckee- Donner Lake Area Portion %	Reno- Sparks Area Portion %	Lake Tahoe Area Portion %	Other Area Portion %
Restaurant					
Groceries and Supplies					
Gasoline					
Other Shopping					
Recreation Rental (boats, bikes, horses, etc.)					
Golf Fees					
Other User Fees					
Gaming					
Total					

10. How much do you spend per year on the following upkeep and repair items to your second-home? Extra space is provided for other items.

Items	Typical Expenditure per Year \$
Painting, Sealing, and Staining	
Landscape Maintenance	
House Cleaning	
Driveway Crack Sealing	
Total	





## Response Summary

Questionnaire response, question response, and comment response is given below. There were 100 questionnaires mailed-out and 42 returned for a 42% response. Question response, meaning the number of respondents that answered each question, varied from 42 respondents that answered question 1 to 28 respondents that answered question 9a. This indicates that of the 42 questionnaires returned only 28 respondents completed the questionnaire. The comment response, meaning the number of respondents that made comments, was 29.

Number of Questionnaires Mailed-Out	100
Number of Questionnaires Returned	42
Number of Respondents that Answered Question 1	42
Number of Respondents that Answered Question 2	41
Number of Respondents that Answered Question 3	40
Number of Respondents that Answered Question 4	39
Number of Respondents that Answered Question 5	38
Number of Respondents that Answered Question 6	38
Number of Respondents that Answered Question 7a	37
Number of Respondents that Answered Question 7b	36
Number of Respondents that Answered Question 7c	31
Number of Respondents that Answered Question 8a	38
Number of Respondents that Answered Question 8b	3
Number of Respondents that Answered Question 8c	3
Number of Respondents that Answered Question 9a	28
Number of Respondents that Answered Question 10	30
Number of Respondents that Made Comments	29

## Descriptive Statistics

The descriptive statistics of the data are presented below with an explanation of their interpretation. The descriptive statistics include the location of main residence, decision factor influence to purchase or build a second-home, second-home ownership, group make-up, annual second-home visitation, site visitation, annual site visitation, summer season Donner Lake visitation, summer season Donner Lake activities, summer season Donner Lake activity hours, ranking of summer season Donner Lake characteristics, summer season Donner Lake alternative lake-level sensitivity, summer season visitation expenditures, and annual second-home upkeep and repair expenditures.

## Location of Main Residence

The highest number of respondents are respondents with a main residence in the San Francisco Bay area.

Table 7.3-1 provides the number of respondents with a main residence in the Sacramento area, the San Francisco Bay area, and Other areas. There are 8 respondents with a main residence in the Sacramento area, 29 respondents with a main residence in the San Francisco Bay area, and 5 respondents with a main residence in Other areas. Other areas being areas of California and out of state.

**Table 7.3-1. Location of Main Residence.**

Number of Respondents with a Main Residence in the Sacramento Area	8
Number of Respondents with a Main Residence in the San Francisco Bay Area	29
Number of Respondents with a Main Residence in Other Areas	5
Total Number of Respondents	42

## **Decision Factor Influence to Purchase or Build a Second-Home**

Winter recreation/proximity to ski areas is the decision factor that has the highest level of influence on the decision to build or purchase a second-home in the Truckee area.

Decision factor influence to purchase or build a second-home by respondents is presented in Table 7.3-2. Decision factors include business/job/retirement, financial/investment/tax purposes, family/community/rural lifestyle, natural setting/environment/climate, winter recreation/proximity to ski areas, water-related summer recreation/proximity to lakes and reservoirs, and other summer recreation/proximity to golf courses and hiking trails. An average level of influence, as a percentage, is given for each decision factor.

The average level of influence is 7% for business/job/retirement, 11% for financial/investment/tax purposes, 7% for family/community/rural lifestyle, 21% for natural setting/environment/climate, 28% for winter recreation/proximity to ski areas, 13% for water-related summer recreation/proximity to lakes and reservoirs, and 13% for other summer recreation/proximity to golf courses and hiking trails. Together the decision factor influence equals 100%.

**Table 7.3-2. Decision Factor Influence to Purchase or Build a Second-Home.**

Average Level of Influence for Business / Job / Retirement by Respondents	7.14%
Average Level of Influence for Financial / Investment / Tax Purposes by Respondents	10.52%
Average Level of Influence for Family / Community / Rural Lifestyle by Respondents	6.55%
Average Level of Influence for Natural Setting / Environment / Climate by Respondents	21.23%
Average Level of Influence for Winter Recreation / Proximity to Ski Areas by Respondents	27.68% X
Average Level of Influence for Water-Related Summer Recreation / Proximity to Lakes and Reservoirs by Respondents	13.49%
Average Level of Influence for Other Summer Recreation / Proximity to Golf Courses and Hiking Trails by Respondents	13.39%
Total	100.00%

## Second-Home Ownership

The highest number of respondents are respondents that do not share ownership of second-home.

Table 7.3-3 provides the number of respondents that share ownership of second-home with others and the number of respondents that do not share ownership of second-home. Of 40 respondents, only one respondent did indicate that they share ownership of second-home with others.

### Table 7.3-3. Second-Home Ownership.

Number of Respondents that Share Ownership of Second-Home with Others	1
Number of Respondents that do not Share Ownership of Second-Home	39
Total Number of Respondents	40



## Group Make-Up

Average group size of respondents is 4.41 persons. Average number of adults per group is 2.69 persons and average number of children per group is 1.72 persons.

Table 7.3-4 provides group make-up of respondents.

### Table 7.3-4. Group Make-Up.

Average Group Size per Visit of Respondents	4.41
Average Number of Adults in Group of Respondents	2.69
Average Number of Children in Group of Respondents	1.72

## **Annual Second-Home Visitation**

Second-home visitation by respondents occurs in all months of the year. The greatest visitation, in terms of both the number of visits by respondents and the number of days per visit by respondents, is in the winter months of December, January, and February. This is followed by visitation in the summer months of June, July, and August.

The average number of visits per month by respondents are presented in Table 7.3-5. Average number of visits by respondents is 1.84 in January, 1.74 in February, 1.66 in March, 1.47 in April, 1.53 in May, 1.67 in June, 1.70 in July, 1.75 in August, 1.62 in September, 1.28 in October, 1.50 in November, and 1.75 in December. The annual or total average number of visits by respondents is 19.51.

The average number of days per visit per month by respondents are also presented in Table 7.3-5. Average number of days per visit by respondents is 3.24 in January, 3.55 in February, 3.14 in March, 3.16 in April, 3.29 in May, 3.10 in June, 3.61 in July, 4.62 in August, 3.40 in September, 2.89 in October, 3.68 in November, and 5.24 in December.

**Table 7.3-5. Annual Second-Home Visitation.**

Average Number of Visits by Respondents during January	1.84
Average Number of Visits by Respondents during February	1.74
Average Number of Visits by Respondents during March	1.66
Average Number of Visits by Respondents during April	1.47
Average Number of Visits by Respondents during May	1.53
Average Number of Visits by Respondents during June	1.67
Average Number of Visits by Respondents during July	1.70
Average Number of Visits by Respondents during August	1.75
Average Number of Visits by Respondents during September	1.62
Average Number of Visits by Respondents during October	1.28
Average Number of Visits by Respondents during November	1.50
Average Number of Visits by Respondents during December	1.75
<b>Total Average Number of Visits by Respondents</b>	<b>19.51</b>
 Average Number of Days per Visit by Respondents during January	 3.24
Average Number of Days per Visit by Respondents during February	3.55
Average Number of Days per Visit by Respondents during March	3.14
Average Number of Days per Visit by Respondents during April	3.16
Average Number of Days per Visit by Respondents during May	3.29
Average Number of Days per Visit by Respondents during June	3.10
Average Number of Days per Visit by Respondents during July	3.61
Average Number of Days per Visit by Respondents during August	4.62
Average Number of Days per Visit by Respondents during September	3.40
Average Number of Days per Visit by Respondents during October	2.89
Average Number of Days per Visit by Respondents during November	3.68
Average Number of Days per Visit by Respondents during December	5.24

## Site Visitation

The overall greatest site visitation of respondents occurs at Donner Lake.

The site visitation of respondents is presented in Table 7.3-6. Study area sites include Lake Tahoe, Donner Lake, Prosser Reservoir, Stampede Reservoir, and Boca Reservoir.

Of the 38 respondents, 63% indicate they visit Lake Tahoe an average of 5 visits during the year, 89% indicate they visit Donner Lake an average of 10 visits during the year, 21% indicate they visit Prosser Reservoir an average of 3 visits during the year, 13% indicate they visit Stampede Reservoir an average of 3 visits during the year, and 16% indicate they visit Boca Reservoir an average of 6 visits during the year.

None of the respondents indicate they visit Pyramid Lake. Pyramid Lake was also listed as a study area site in the question.

**Table 7.3-6. Site Visitation.**

	<b>Study Area</b>	<b>Lake Tahoe</b>	<b>Donner Lake</b>	<b>Promer Reservoir</b>	<b>Stampede Reservoir</b>	<b>Boca Reservoir</b>
<b>Number of Respondents</b>	<b>38</b>	<b>24</b>	<b>34</b>	<b>8</b>	<b>5</b>	<b>6</b>
<b>Percentage of Respondents</b>		<b>63.16%</b>	<b>89.47%</b>	<b>21.05%</b>	<b>13.16%</b>	<b>15.79%</b>
<b>Number of Visits by Respondents</b>		<b>128.90</b>	<b>352.50</b>	<b>26.00</b>	<b>15.00</b>	<b>34.00</b>
<b>Average Number of Visits by Respondents</b>		<b>5.37</b>	<b>10.37</b>	<b>3.25</b>	<b>3.00</b>	<b>5.67</b>

## **Annual Site Visitation**

The annual site visitation of respondents follow a similar pattern. This pattern shows that during the year, visitation to a site will begin in April and steadily increase throughout May, June, July, and August and then decrease sharply during September and October to end at a very low visitation during the Other months.

The annual site visitation of respondents is shown in Table 7.3-7. Again, study area sites include Lake Tahoe, Donner Lake, Prosser Reservoir, Stampede Reservoir, and Boca Reservoir.

The pattern of annual visitation for a site is based on the number of respondents that indicate they visit the study area and visit the site in a given month. To clarify this, for Donner Lake, 9 out of 17 respondents indicate they visit in April, 13 out of 29 respondents indicate they visit in May, 20 out of 41 respondents indicate they visit in June, 28 out of 55 respondents indicate they visit in July, 29 out of 63 respondents indicate they visit in August, 19 out of 37 respondents indicate they visit in September, 6 out of 14 respondents indicate they visit in October, and 6 out of 14 respondents indicate they visit in Other months.

These numbers are then divided by their summation and presented as a percentage of visitation during the given month. Of the total annual visitation at Donner Lake, 7% is during April, 10% is during May, 15% is during June, 21% is during July, 22% is during August, 15% is during September, 5% is during October, and 5% is during Other months.

The percentages taken together for all the months show the pattern of annual site visitation.

A similar interpretation can be made for the other sites.

**Table 7.3-7. Annual Site Visitation.**

	Study Area	Lake Tahoe	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boca Reservoir
Number of Respondents that Visit during April	17	5	9	1	0	2
Number of Respondents that Visit during May	29	10	13	2	1	3
Number of Respondents that Visit during June	41	13	20	2	3	3
Number of Respondents that Visit during July	55	16	28	5	2	4
Number of Respondents that Visit during August	63	21	29	5	4	4
Number of Respondents that Visit during September	37	13	19	2	0	3
Number of Respondents that Visit during October	14	7	6	0	0	1
Number of Respondents that Visit during Other	14	8	6	0	0	0
Total Number of Respondents		93	130	17	10	20
Percentage of Visitation during April		5.38%	6.92%	5.88%	0.00%	10.00%
Percentage of Visitation during May		10.75%	10.00%	11.76%	10.00%	15.00%
Percentage of Visitation during June		13.98%	15.38%	11.76%	30.00%	15.00%
Percentage of Visitation during July		17.20%	21.54%	29.41%	20.00%	20.00%
Percentage of Visitation during August		22.58%	22.31%	29.41%	40.00%	20.00%
Percentage of Visitation during September		13.98%	14.62%	11.76%	0.00%	15.00%
Percentage of Visitation during October		7.53%	4.62%	0.00%	0.00%	5.00%
Percentage of Visitation during Other		8.60%	4.62%	0.00%	0.00%	0.00%



### Summer Season Donner Lake Visitation

The number of respondents that visit Donner Lake during the summer season months of June, July, and August is 32. This number of respondents is out of 37 respondents that visit their second-home during the summer season months. Average number of days per visit at Donner Lake by these 32 respondents during the summer season months is 2.42 days.

Table 7.3-8 presents the summer season Donner Lake visitation.

**Table 7.3-8. Summer Season Donner Lake Visitation.**

Number of Respondents	32
Average Number of Days per Visit by Respondents	2.42

### **Summer Season Donner Lake Activities**

Respondents that visit Donner Lake during the summer season participate in picnicking, hiking, swimming, fishing and biking activities.

Summer season Donner Lake activities of respondents are shown in Table 7.3-9. The activities include fishing from shore, fishing from a boat, water skiing, boating, jet skiing, swimming, picnicking, hiking, biking and other activities.

Of 36 respondents, 43% indicate fishing from shore, 23% indicate fishing from a boat, 17% indicate water skiing, 33% indicate boating, 7% indicate jet skiing, 57% indicate swimming, 70% indicate picnicking, 70% indicate hiking, and 43% indicate biking.

**Table 7.3-9. Summer Season Donner Lake Activities.**

Number of Respondents Fishing	13
Number of Respondents Fishing from Boat	7
Number of Respondents Water Skiing	5
Number of Respondents Boating	10
Number of Respondents Jet Skiing	2
Number of Respondents Swimming	17
Number of Respondents Picnicking	21
Number of Respondents Hiking	21
Number of Respondents Biking	13
Number of Respondents Other	0
Percentage of Respondents Fishing	43.33%
Percentage of Respondents Fishing from Boat	23.33%
Percentage of Respondents Water Skiing	16.67%
Percentage of Respondents Boating	33.33%
Percentage of Respondents Jet Skiing	6.67%
Percentage of Respondents Swimming	56.67%
Percentage of Respondents Picnicking	70.00%
Percentage of Respondents Hiking	70.00%
Percentage of Respondents Biking	43.33%
Percentage of Respondents Other	0.00%

## **Summer Season Donner Lake Activity Hours**

Respondents that visit Donner Lake during the summer season spend an average of 6.62 hours per day on activities.

Summer season Donner Lake activity hours per day of respondents are provided in Table 7.3-10. Again the activities include fishing from shore, fishing from a boat, water skiing, boating, jet skiing, swimming, picnicking, hiking, biking and other activities.

Respondents indicate they spend an average of 0.74 hours per day fishing from shore, 0.52 hours per day fishing from a boat, 0.32 hours per day water skiing, 0.74 hours per day boating, 0.23 hours per day jet skiing, 1.00 hour per day swimming, 1.23 hours per day picnicking, 1.16 hours per day hiking, 0.68 hours per day biking, and 0.00 hours per day on other activities.

**Table 7.3-10. Summer Season Donner Lake Activity Hours.**

<i>Average Activity Hours per Day spent Fishing by Respondents</i>	<i>0.74</i>
<i>Average Activity Hours per Day spent Fishing from Boat by Respondents</i>	<i>0.52</i>
<i>Average Activity Hours per Day spent Water Skiing by Respondents</i>	<i>0.32</i>
<i>Average Activity Hours per Day spent Boating by Respondents</i>	<i>0.74</i>
<i>Average Activity Hours per Day spent Jet Skiing by Respondents</i>	<i>0.23</i>
<i>Average Activity Hours per Day spent Swimming by Respondents</i>	<i>1.00</i>
<i>Average Activity Hours per Day spent Picnicking by Respondents</i>	<i>1.23</i>
<i>Average Activity Hours per Day spent Hiking by Respondents</i>	<i>1.16</i>
<i>Average Activity Hours per Day spent Biking by Respondents</i>	<i>0.68</i>
<i>Average Activity Hours per Day spent on Other activities by Respondents</i>	<i>0.00</i>
<b>Total Activity Hours per Day by Respondents</b>	<b>6.62</b>

## **Ranking of Summer Season Donner Lake Characteristics**

Respondents that visit Donner Lake during the summer season rank site characteristics as very good to satisfactory.

Ranking of summer season Donner Lake Characteristics by respondents is shown in Table 7.3-11. Site characteristics include natural setting and environment, recreation opportunities, lake-level, boat ramp and dock access, crowd level, and facilities. The ranking of each can range from 1 being very good to 5 being very poor.

Respondents rank natural setting and environment as very good, recreation opportunities as good, lake-level as satisfactory, boat ramp and dock access as good, crowd level as satisfactory, and facilities as good.

**Table 7.3-11. Ranking of Summer Season Donner Lake Characteristics.**

Average Value of Natural Setting and Environment by Respondents	1.24
Average Value of Recreation Opportunities by Respondents	1.78
Average Value of Lake-Level by Respondents	2.57
Average Value of Boat Ramp and Dock Access by Respondents	2.37
Average Value of Crowd Level by Respondents	2.51
Average Value of Facilities by Respondents	2.34

Ranking: 1=Very Good; 2=Good; 3=Satisfactory; 4=Poor; and, 5=Very Poor.



### **Summer Season Donner Lake Alternative Lake Level Sensitivity**

The number of respondents that indicate a change in the number of second-home visits at alternative lake-levels for Donner Lake during the summer season is 7. The number of respondents that indicate no change in the number of second-home visits at alternative lake levels for Donner Lake during the summer season is 30.

Table 7.3-12 provides the summer season Donner Lake alternative lake-level sensitivity.

**Table 7.3-12. Summer Season Donner Lake Alternative Lake-Level Sensitivity.**

Number of Respondents that indicated a Change in the Number of Second-Home Visits at Alternative Lake-Levels	7
Number of Respondents that indicated No Change in the Number of Second-Home Visits at Alternative Lake-Levels	30
Total Number of Respondents	37

## Summer Season Visitation Expenditures

Visitation expenditures by respondents during the summer season are highest on restaurant and groceries.

Summer season visitation expenditures by respondents are presented in Table 7.3-13. Average expenditure per visit, average expenditure per visit per day, and average expenditure per visit per day per person are given for restaurant, groceries, gasoline, other shopping, recreation rental, golf fees, other user fees, gaming, and other.

Respondents indicate an average total expenditure per visit of \$343.26, an average total expenditure per visit per day of \$92.73, and an average total expenditure per visit per day per person of \$26.09.

**Table 7.3-13. Summer Season Visitation Expenditures.**

Average Expenditure per Visit on Restaurant by Respondents	94.38
Average Expenditure per Visit on Groceries by Respondents	88.89
Average Expenditure per Visit on Gasoline by Respondents	28.75
Average Expenditure per Visit on Other Shopping by Respondents	32.32
Average Expenditure per Visit on Recreation Rental by Respondents	30.89
Average Expenditure per Visit on Golf Fees by Respondents	33.3
Average Expenditure per Visit on Other User Fees by Respondents	2.59
Average Expenditure per Visit on Gaming by Respondents	28.57
Average Expenditure per Visit on Other by Respondents	3.57
<b>Average Total Expenditure per Visit by Respondents</b>	<b>\$343.26</b>
Average Expenditure per Visit per Day on Restaurant by Respondents	26.95
Average Expenditure per Visit per Day on Groceries by Respondents	23.25
Average Expenditure per Visit per Day on Gasoline by Respondents	7.81
Average Expenditure per Visit per Day on Other Shopping by Respondents	9.38
Average Expenditure per Visit per Day on Recreation Rental by Respondents	9.07
Average Expenditure per Visit per Day on Golf Fees by Respondents	8.02
Average Expenditure per Visit per Day on Other User Fees by Respondents	0.70
Average Expenditure per Visit per Day on Gaming by Respondents	6.66
Average Expenditure per Visit per Day on Other by Respondents	0.89
<b>Average Total Expenditure per Visit per Day by Respondents</b>	<b>\$92.73</b>
Average Expenditure per Visit per Day per Person on Restaurant by Respondents	7.95
Average Expenditure per Visit per Day per Person on Groceries by Respondents	6.73
Average Expenditure per Visit per Day per Person on Gasoline by Respondents	2.33
Average Expenditure per Visit per Day per Person on Other Shopping by Respondents	2.61
Average Expenditure per Visit per Day per Person on Recreation Rental by Respondents	2.29
Average Expenditure per Visit per Day per Person on Golf Fees by Respondents	2.20
Average Expenditure per Visit per Day per Person on Other User Fees by Respondents	0.15
Average Expenditure per Visit per Day per Person on Gaming by Respondents	1.74
Average Expenditure per Visit per Day per Person on Other by Respondents	0.09
<b>Average Total Expenditure per Visit per Day per Person by Respondents</b>	<b>\$26.09</b>

### **Annual Second-Home Upkeep and Repair Expenditures**

The average annual total expenditure by respondents on second-home upkeep and repair is \$1,201.67.

Annual second-home upkeep and repair expenditures by respondents are provided in Table 7.3-14. Expenditures are average annual expenditures on painting, sealing, staining, landscape maintenance, house cleaning, driveway crack sealing, and other.

Respondents indicate an average annual expenditure on painting, sealing, and staining of \$507.50, on landscape maintenance of \$158.33, on house cleaning of \$271.00, on driveway crack sealing of \$110.67, and on other upkeep of \$154.17. Again, the average annual total expenditure is \$1,201.67.

**Table 7.3-14. Annual Second-Home Upkeep and Repair Expenditures.**

Average Annual Expenditure on Painting, Sealing, and Staining by Respondents	507.50
Average Annual Expenditure on Landscape Maintenance by Respondents	158.33
Average Annual Expenditure on House Cleaning by Respondents	271.00
Average Annual Expenditure on Driveway Crack Sealing by Respondents	110.67
Average Annual Expenditure on Other by Respondents	154.17
Average Annual Total Expenditure by Respondents	\$1,201.67

## Comments

Excerpts taken from a few comments made by respondents on owning a second-home in the Truckee area are listed below.

1. "A good vacation area near the Bay Area, Family oriented climate in Tahoe-Donner"
2. "Recreation surroundings are very nice - water level is a concern and it is too bad that so much is taken from it each year for the valley..."
3. "We like the Tahoe Donner and Truckee area very much. Our main concern is over development...We are concerned that Tahoe Donner will get too crowded. ...Re: The Tahoe Donner Marina - the swimming area needs to be improved to make wading into the water easier for children...sand needs to be added in the shallow area so children are not walking on rocks... pool areas too crowded."
4. "...Tahoe Donner is a beautiful setting for a second home - the area is perfect year round...We like the small community lifestyle...We'd like to see the Tahoe Donner Area remain beautiful, scenic and that growth be controlled."
5. "Great place to get away. Love the natural mountain environment and the town of Truckee."
6. "We love our home. However...Tahoe Donner ski area would be more appealing if it were expanded...Another golf course perhaps not so difficult would be a big plus...We would like to see an expanded Trout Creek facility..."
7. "I don't use Donner Lake because of the crowds and noise...My decision to purchase a second home is based mainly on access to streams and rivers in the summer, winter sports in the winter...The total lack of water conservation in Reno/Sparks and the over use of water in Carson Valley (and related areas) on agri-business is my #1 concern for the area."
8. "I would like to see growth slowed in the region to minimize the impact on the environment...If it gets too crowded in future years I will have to sell and relocate."

9. "The Truckee area is as beautiful of an area as any I have seen...a rare mix...amenities available and still having a feeling of being by an unspoiled mountain lake...it is of utmost importance to preserve this balance from an economic viewpoint as well as an ecological one. I answered "NO" to your question #8 but I do feel that the lake is much more enjoyable both aesthetically as well as from a useful point of view, when lake levels are kept as high as possible. Please do whatever is possible to keep these levels high. Thank you"
10. "Would prefer No more development either commercial or residential as too many people destroy the environment's beauty that is inherent in this setting"



#### 7.4. Survey of the Vacation-Home Renters

A survey of vacation-home renters for the Truckee area was done during February 1995. The purpose of the survey was to first obtain an overall picture of the summer season visitation and recreation activities of vacation-home renters, second, quantify the amount of expenditures that vacation-home renters make to the local economy, and third, identify how vacation-home visitation would change during the summer season in relation to alternative lake-levels at Donner Lake. To achieve this purpose, information was collected from vacation-home renters using a questionnaire. Questionnaires were mailed-out to vacation-home renters and when returned the data was compiled and analyzed to develop a set of descriptive statistics. The cover letter to the questionnaire, the questionnaire, a response summary, descriptive statistics of the data, and comments are presented below.

Cover Letter

February 15, 1995

Dear Vacation-Home Renter:

The Town of Truckee requests your participation in a survey. This survey is being conducted by the University of Nevada, Reno. Information collected will be used in assessing the economic and recreation issues associated with lakes and reservoirs in the Truckee area. This information will help local, state, and federal officials make informed decisions on how best to manage the lakes, reservoirs, and rivers in the Truckee River Basin.

The enclosed questionnaire takes less than 15 minutes to complete. A limited number of vacation-home renters are receiving this questionnaire, so your response means a lot. Please complete the questionnaire as best you can and then mail the questionnaire in the stamped pre-addressed envelope.

The tabulated results of this survey will be made available for your review at the Truckee Town Hall. The Town of Truckee appreciates your participation in this survey and thanks you for your time.

PLEASE RETURN YOUR COMPLETED QUESTIONNAIRE BEFORE  
MARCH 1ST.

Sincerely,

Embree B. (Breeze) Cross  
Mayor

## Questionnaire

The questionnaire is made-up of eight questions and a comment page. Through the questionnaire, vacation-home renters were asked to provide information on the location of main residence, influence of decision factors to rent a vacation-home, group make-up, vacation-home visitation in terms of both the number of visits per month and number of days per visit, site visitation at area lakes and reservoirs, summer season visitation and recreation activities at Donner Lake, summer season characteristics of Donner Lake, sensitivity to alternative lake-levels at Donner Lake, expenditures per visit, and vacation-home rent. Also through the questionnaire, vacation-home renters were asked to mention any comments about renting a vacation-home in the Truckee area. Each of the eight questions and the comment page are presented below.

1. Where is your main residence?

City \_\_\_\_\_  
State \_\_\_\_\_  
Zip Code \_\_\_\_\_

2. How did the following factors influence your decision to rent a vacation-home in the Truckee area? Please indicate, as a percentage, the level of influence each factor had on your decision. Be sure that the total is equal to 100%.

Decision Factors	Level of Influence %
Family / Community / Rural Lifestyle	
Natural Setting / Environment / Climate	
Winter Recreation / Proximity to Ski Areas	
Water-Related Summer Recreation / Proximity to Lakes and Reservoirs	
Other Summer Recreation / Proximity to Golf Courses and Hiking Trails	
Total	100%

3. How many adults and children are included in a typical visit to the Truckee area?

Typical Number of Adults per Visit \_\_\_\_\_  
Typical Number of Children per Visit \_\_\_\_\_

4. How many times do you visit the Truckee area and how many days do you spend per visit during each of the following months?

Months	Typical Number of Visits per Month	Typical Number of Days per Visit
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		

5. How many times do you visit Lake Tahoe, Donner Lake, Prosser Reservoir, Stampede Reservoir, Boca Reservoir, and Pyramid Lake for recreation during each of the following months?

Months	Typical Number of Visits per Month					
	Lake Tahoe	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boca Reservoir	Pyramid Lake
April						
May						
June						
July						
August						
September						
October						
November through March						

6. The summer recreation season is comprised of the months of June, July, and August including Memorial Day and Labor Day weekends. During this season: (please answer questions a, b, and c)

- a. How many days per visit to the Truckee area do you spend on recreation at Donner Lake?

Typical Number of Days per Visit \_\_\_\_\_

- b. How many hours per day do you spend on the following recreation activities at Donner Lake? Please indicate by marking the appropriate box, the number of hours per day for each recreation activity. Extra space is provided for other activities.

Recreation Activities

Typical Number of Hours per Day

Fishing from Shore	0	1	2	3	4	5	6	7	8	9	10	11	12
Fishing from Boat	0	1	2	3	4	5	6	7	8	9	10	11	12
Water Skiing	0	1	2	3	4	5	6	7	8	9	10	11	12
Pleasure Boating	0	1	2	3	4	5	6	7	8	9	10	11	12
Jet Skiing	0	1	2	3	4	5	6	7	8	9	10	11	12
Swimming	0	1	2	3	4	5	6	7	8	9	10	11	12
Picnicing	0	1	2	3	4	5	6	7	8	9	10	11	12
Hiking	0	1	2	3	4	5	6	7	8	9	10	11	12
Biking	0	1	2	3	4	5	6	7	8	9	10	11	12
	0	1	2	3	4	5	6	7	8	9	10	11	12
	0	1	2	3	4	5	6	7	8	9	10	11	12

- c. How do you rate the following characteristics of Donner Lake? Please rate the characteristics as very good, good, satisfactory, poor, or very poor.

Characteristics

Very  
Good

Good

Satisfactory

Poor

Very  
Poor

Natural Setting and Environment					
Recreation Opportunities					
Lake-Level					
Boat Ramp and Dock Access					
Crowd Level					
Facilities					

7. The summer recreation season is comprised of the months of June, July, and August including Memorial Day and Labor Day weekends. During this season, the lake-level at Donner Lake is regulated between the following five lake-levels: (please answer questions a, b, and c)

Lake-Levels			Boat Ramp and Boat Dock Status			
Lake-Level	Lake Elevation	Lake Elevation Drop	Public Boat Ramp Status	Tahoe Donner Boat Ramp Status	Donner Lake Property Owner Boat Ramp Status	Public Boat Docks Status
	<i>feet</i>	<i>feet</i>				
1	5,936 maximum	0	usable	usable	usable	usable / safe
2	5,935	1	usable	usable	usable	usable / safe
3	5,934	2	usable	marginal	marginal	marginal
4	5,933	3	usable	unusable	unusable	unusable / unsafe
5	5,932	4	usable	unusable	unusable	unusable / unsafe

- a. Would the number of visits you make during each month to the Truckee area change at any of the above lake-levels?

No \_\_\_\_\_ (if No, please go to question 8)

Yes \_\_\_\_\_

- b. If Yes, please indicate below, how you would change your number of visits per month to the Truckee area? At each lake-level, circle whether you would have no change, an increase, or a decrease in the number of visits per month. Also indicate the corresponding increase or decrease in the number of visits per month.

Lake-Level		Change in Number of Visits per Month		
		<i>Circle One</i>		<i>Increase / Decrease</i>
1	No Change	Increase	Decrease	
2	No Change	Increase	Decrease	
3	No Change	Increase	Decrease	
4	No Change	Increase	Decrease	
5	No Change	Increase	Decrease	

- c. If Yes, how would you then rate the following characteristics of Donner Lake at the lake-level where you first indicated that you would change the number of visits to the Truckee area? Please rate the following characteristics as very good, good, satisfactory, poor, or very poor.

Characteristics	Very Good	Good	Satisfactory	Poor	Very Poor
Natural Setting and Environment					
Recreation Opportunities					
Lake-Level					
Boat Ramp and Dock Access					
Crowd Level					
Facilities					

8. The summer recreation season is comprised of the months of June, July, and August including Memorial Day and Labor Day weekends. During this season: (please answer question a)
- a. How much do you spend on the following items per visit to the Truckee area? Please indicate your expenditure on each item and the portion that you spend in the Truckee-Donner Lake area, Reno-Sparks area, Lake Tahoe area, and Other area. Extra space is provided for other items.

Items	Typical Expenditure per Visit	Truckee-Donner Lake Area Portion	Reno-Sparks Area Portion	Lake Tahoe Area Portion	Other Area Portion
	\$	%	%	%	%
Restaurant					
Groceries and Supplies					
Gasoline					
Other Shopping					
Recreation Rental (boats, bikes, horses, etc.)					
Golf Fees					
Other User Fees					
Gaming					
Total					

- b. How much do you spend per visit to rent a vacation-home in the Truckee area?

Typical Vacation-Home Rent Expenditure per Visit \$\_\_\_\_\_



[illegible]

## Response Summary

Questionnaire response, question response, and comment response is given below. There were 100 questionnaires mailed-out and 21 returned for a 21% response. Question response, meaning the number of respondents that answered each question, varied from 21 respondents that answered question 1 to 8 respondents that answered question 8a. This indicates that of the 21 questionnaires returned only 8 respondents completed the questionnaire. The comment response, meaning the number of respondents that made comments, was 15.

Questionnaires Mailed-Out	100
Questionnaires Returned	21
Number of Respondents that Answered Question 1	21
Number of Respondents that Answered Question 2	21
Number of Respondents that Answered Question 3	20
Number of Respondents that Answered Question 4	20
Number of Respondents that Answered Question 5	20
Number of Respondents that Answered Question 6a	20
Number of Respondents that Answered Question 6b	8
Number of Respondents that Answered Question 6c	8
Number of Respondents that Answered Question 7a	19
Number of Respondents that Answered Question 7b	0
Number of Respondents that Answered Question 7c	0
Number of Respondents that Answered Question 8a	8
Number of Respondents that Answered Question 8b	8
Number of Respondents that Made Comments	15

## Descriptive Statistics

The descriptive statistics of the data are presented below with an explanation of their interpretation. The descriptive statistics include the location of main residence, decision factor influence to rent a vacation home, group make-up, annual vacation-home visitation, site visitation, annual site visitation, summer season Donner Lake visitation, summer season Donner Lake activities, summer season Donner Lake activity hours, ranking of summer season Donner Lake characteristics, summer season Donner Lake alternative lake-level sensitivity, summer season visitation expenditures, and rent expenditures.

## Location of Main Residence

The highest number of respondents are respondents with a main residence in the San Francisco Bay area.

Table 7.4-1 provides the number of respondents with a main residence in the Sacramento area, the San Francisco Bay area, and Other areas. There are 4 respondents with a main residence in the Sacramento area, 14 respondents with a main residence in the San Francisco Bay area, and 3 respondents with a main residence in Other areas. Other areas being areas of California and out of state.

**Table 7.4-1. Location of Main Residence.**

Number of Respondents with a Main Residence in the Sacramento Area	4
Number of Respondents with a Main Residence in the San Francisco Bay Area	14
Number of Respondents with a Main Residence in Other Areas	3
Total Number of Respondents	21

## **Decision Factor Influence to Rent a Vacation-Home**

Winter recreation/proximity to ski areas is the decision factor that has the highest level of influence on the decision to rent a vacation-home in the Truckee area.

Decision factor influence to rent a vacation-home by respondents is presented in Table 7.4-2. Decision factors include family/community/rural lifestyle, natural setting/environment/climate, winter recreation/proximity to ski areas, water-related summer recreation/proximity to lakes and reservoirs, and other summer recreation/proximity to golf courses and hiking trails. An average level of influence, as a percentage, is given for each decision factor.

The average level of influence is 12% for family/community/rural lifestyle, 25% for natural setting/environment/climate, 52% for winter recreation/proximity to ski areas, 7% for water-related summer recreation/proximity to lakes and reservoirs, and 4% for other summer recreation/proximity to golf courses and hiking trails. Together the decision factor influence equals 100%.

**Table 7.4-2. Decision Factor Influence to Rent a Vacation-Home.**

Average Level of Influence for Family / Community / Rural Lifestyle by Respondents	12.30%
Average Level of Influence for Natural Setting / Environment / Climate by Respondents	25.30%
Average Level of Influence for Winter Recreation / Proximity to Ski Areas by Respondents	51.90%
Average Level of Influence for Water-Related Summer Recreation / Proximity to Lakes and Reservoirs by Respondents	6.35%
Average Level of Influence for Other Summer Recreation / Proximity to Golf Courses and Hiking Trails by Respondents	4.15%
Total	100.00%

## Group Make-Up

Average group size of respondents is 6.15 persons. Average number of adults per group is 4.85 persons and average number of children per group is 1.30 persons.

Table 7.4-3 provides group make-up of respondents.



### Table 7.4-3. Group Make-Up.

Average Group Size per Visit of Respondents	6.15
Average Number of Adults in Group of Respondents	4.85
Average Number of Children in Group of Respondents	1.30

## Annual Vacation-Home Visitation

Vacation-home visitation by respondents occurs in all months of the year. The greatest number of visits by respondents is in the months of December, January, February, March, and April. This is followed by visits in the months of July and August. The greatest number of days per visit by respondents, however, is in the months of July and August. This is followed by days per visit in the months of December, January, February, March, and April.

The average number of visits per month by respondents are presented in Table 7.4-4. Average number of visits by respondents is 1.05 in January, 1.20 in February, 0.73 in March, 0.43 in April, 0.05 in May, 0.10 in June, 0.30 in July, 0.30 in August, 0.00 in September, 0.05 in October, 0.05 in November, and 0.65 in December. The annual or total average number of visits by respondents is 4.91.

The average number of days per visit per month by respondents are also presented in Table 7.4-4. Average number of days per visit by respondents is 2.57 in January, 2.63 in February, 2.97 in March, 2.41 in April, 3.00 in May, 2.25 in June, 4.42 in July, 4.08 in August, 0.00 in September, 1.00 in October, 2.00 in November, and 2.35 in December.

**Table 7.4-4. Annual Vacation-Home Visitation.**

Average Number of Visits by Respondents during January	1.05
Average Number of Visits by Respondents during February	1.20
Average Number of Visits by Respondents during March	0.73
Average Number of Visits by Respondents during April	0.43
Average Number of Visits by Respondents during May	0.05
Average Number of Visits by Respondents during June	0.10
Average Number of Visits by Respondents during July	0.30
Average Number of Visits by Respondents during August	0.30
Average Number of Visits by Respondents during September	0.00
Average Number of Visits by Respondents during October	0.05
Average Number of Visits by Respondents during November	0.05
Average Number of Visits by Respondents during December	0.65
<b>Total Average Number of Visits by Respondents</b>	<b>4.91</b>
 Average Number of Days per Visit by Respondents during January	 2.57
Average Number of Days per Visit by Respondents during February	2.63
Average Number of Days per Visit by Respondents during March	2.97
Average Number of Days per Visit by Respondents during April	2.41
Average Number of Days per Visit by Respondents during May	3.00
Average Number of Days per Visit by Respondents during June	2.25
Average Number of Days per Visit by Respondents during July	4.42
Average Number of Days per Visit by Respondents during August	4.08
Average Number of Days per Visit by Respondents during September	0.00
Average Number of Days per Visit by Respondents during October	1.00
Average Number of Days per Visit by Respondents during November	2.00
Average Number of Days per Visit by Respondents during December	2.35

## Site Visitation

The overall greatest site visitation of respondents occurs at Donner Lake.

The site visitation of respondents is presented in Table 7.4-5. Study area sites include Lake Tahoe, Donner Lake, Prosser Reservoir, Stampede Reservoir, and Boca Reservoir.

Of the 20 respondents, 50% indicate they visit Lake Tahoe an average of 3 visits during the year, 45% indicate they visit Donner Lake an average of 3 visits during the year, 5% indicate they visit Prosser Reservoir an average of 1 visit during the year, 0% indicate they visit Stampede Reservoir an average of 0 visits during the year, and 10% indicate they visit Boca Reservoir an average of 3 visits during the year.

None of the respondents indicate they visit Pyramid Lake. Pyramid Lake was also listed as a study area site in the question.

**Table 7.4-5. Site Visitation.**

	Study Area	Lake Tahoe	Donner Lake	Promer Reservoir	Stampede Reservoir	Boca Reservoir
Number of Respondents	20	10	9	1	0	2
Percentage of Respondents		50.00%	45.00%	5.00%	0.00%	10.00%
Number of Visits by Respondents		26.00	27.50	1.00	0.00	6.00
Average Number of Visits by Respondents		2.60	3.06	1.00	0.00	3.00

## Annual Site Visitation

The annual site visitation of respondents follow a similar pattern. This pattern shows that visitation at a site is the highest in June, July, and August.

The annual site visitation of respondents is shown in Table 7.4-6. Again, study area sites include Lake Tahoe, Donner Lake, Prosser Reservoir, Stampede Reservoir, and Boca Reservoir.

The pattern of annual visitation for a site is based on the number of respondents that indicate they visit the study area and visit the site in a given month. To clarify this, for Donner Lake, 2 out of 2 respondents indicate they visit in April, 1 out of 2 respondents indicate they visit in May, 1 out of 6 respondents indicate they visit in June, 4 out of 9 respondents indicate they visit in July, 4 out of 10 respondents indicate they visit in August, 0 out of 2 respondents indicate they visit in September, 0 out of 0 respondents indicate they visit in October, and 3 out of 6 respondents indicate they visit in Other months.

These numbers are then divided by their summation and presented as a percentage of visitation during the given month. Of the total annual visitation at Donner Lake, 13% is during April, 7% is during May, 7% is during June, 27% is during July, 27% is during August, 0% is during September, 0% is during October and 19% is during other months.

The percentages taken together for all the months then show the pattern of annual site visitation.

A similar interpretation can be made for the other sites.

**Table 7.4-6. Annual Site Visitation.**

Study Area	Lake Tahoe	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boca Reservoir
Number of Respondents that Visit during April	2	0	2	0	0
Number of Respondents that Visit during May	2	1	1	0	0
Number of Respondents that Visit during June	6	4	1	0	0
Number of Respondents that Visit during July	9	4	4	0	1
Number of Respondents that Visit during August	10	4	4	0	2
Number of Respondents that Visit during September	2	2	0	0	0
Number of Respondents that Visit during October	0	0	0	0	0
Number of Respondents that Visit during Other	6	3	3	0	0
<b>Total Number of Respondents</b>	<b>18</b>	<b>15</b>	<b>1</b>	<b>0</b>	<b>3</b>
Percentage of Visitation during April	0.00%	13.33%	0.00%	0.00%	0.00%
Percentage of Visitation during May	5.56%	6.67%	0.00%	0.00%	0.00%
Percentage of Visitation during June	22.22%	6.67%	100.00%	0.00%	0.00%
Percentage of Visitation during July	22.22%	26.67%	0.00%	0.00%	33.33%
Percentage of Visitation during August	22.22%	26.67%	0.00%	0.00%	66.67%
Percentage of Visitation during September	11.11%	0.00%	0.00%	0.00%	0.00%
Percentage of Visitation during October	0.00%	0.00%	0.00%	0.00%	0.00%
Percentage of Visitation during Other	16.67%	20.00%	0.00%	0.00%	0.00%

### Summer Season Donner Lake Visitation

The number of respondents that visit Donner Lake during the summer season months of June, July, and August is 8. This number of respondents is out of 9 respondents that rent a vacation-home during the summer season months. Average number of days per visit at Donner Lake by these 8 respondents during the summer season months is 3.25 days.

Table 7.4-7 presents the summer season Donner Lake visitation.



**Table 7.4-7. Summer Season Donner Lake Visitation.**

Number of Respondents	8
Average Number of Days per Visit by Respondents	3.25

## **Summer Season Donner Lake Activities**

Respondents that visit Donner Lake during the summer season participate in swimming, picnicking, hiking, boating, fishing, jet skiing, and biking activities.

Summer season Donner Lake activities of respondents are shown in Table 7.4-8. The activities include fishing from shore, fishing from a boat, water skiing, boating, jet skiing, swimming, picnicking, hiking, biking and other activities.

Of 8 respondents, 25% indicate fishing from shore, 13% indicate fishing from a boat, 0% indicate water skiing, 63% indicate boating, 0% indicate jet skiing, 63% indicate swimming, 75% indicate picnicking, 63% indicate hiking, and 13% indicate biking.

**Table 7.4-8. Summer Season Donner Lake Activities.**

Number of Respondents Fishing	2
Number of Respondents Fishing from Boat	1
Number of Respondents Water Skiing	0
Number of Respondents Bunting	5
Number of Respondents Jet Skiing	1
Number of Respondents Swimming	5
Number of Respondents Picnicking	6
Number of Respondents Hiking	5
Number of Respondents Biking	1
Number of Respondents Other	0
Percentage of Respondents Fishing	25.00%
Percentage of Respondents Fishing from Boat	12.50%
Percentage of Respondents Water Skiing	0.00%
Percentage of Respondents Bunting	62.50%
Percentage of Respondents Jet Skiing	12.50%
Percentage of Respondents Swimming	62.50%
Percentage of Respondents Picnicking	75.00%
Percentage of Respondents Hiking	62.50%
Percentage of Respondents Biking	12.50%
Percentage of Respondents Other	0.00%

## Summer Season Donner Lake Activity Hours

Respondents that visit Donner Lake during the summer season spend an average of 8.40 hours per day on activities.

Summer season Donner Lake activity hours per day of respondents are provided in Table 7.4-9. Again the activities include fishing from shore, fishing from a boat, water skiing, boating, jet skiing, swimming, picnicking, hiking, biking and other activities.

Respondents indicate they spend an average of 1.13 hours per day fishing from shore, 0.25 hours per day fishing from a boat, 0.00 hours per day water skiing, 1.38 hours per day boating, 0.25 hours per day jet skiing, 2.13 hour per day swimming, 1.88 hours per day picnicking, 1.25 hours per day hiking, 0.13 hours per day biking, and 0.00 hours per day on other activities.

**Table 7.4-9. Summer Season Donner Lake Activity Hours.**

Average Activity Hours per Day spent Fishing by Respondents	1.13
Average Activity Hours per Day spent Fishing from Boat by Respondents	0.25
Average Activity Hours per Day spent Water Skiing by Respondents	0.00
Average Activity Hours per Day spent Boating by Respondents	1.38
Average Activity Hours per Day spent Jet Skiing by Respondents	0.25
Average Activity Hours per Day spent Swimming by Respondents	2.13
Average Activity Hours per Day spent Picnicking by Respondents	1.88
Average Activity Hours per Day spent Hiking by Respondents	1.25
Average Activity Hours per Day spent Biking by Respondents	0.13
Average Activity Hours per Day spent on Other activities by Respondents	0.00
<b>Total Activity Hours per Day by Respondents</b>	<b>8.40</b>

## **Ranking of Summer Season Donner Lake Characteristics**

**Respondents that visit Donner Lake during the summer season rank site characteristics as good to satisfactory.**

**Ranking of summer season Donner Lake Characteristics by respondents is shown in Table 7.4-10. Site characteristics include natural setting and environment, recreation opportunities, lake-level, boat ramp and dock access, crowd level, and facilities. The ranking of each can range from 1 being very good to 5 being very poor.**

**Respondents rank natural setting and environment as good, recreation opportunities as good, lake-level as good, boat ramp and dock access as good, crowd level as satisfactory, and facilities as good.**

**Table 7.4-10. Ranking of Summer Season Donner Lake Characteristics.**

Average Value of Natural Setting and Environment by Respondents	1.88
Average Value of Recreation Opportunities by Respondents	2.00
Average Value of Lake-Level by Respondents	2.38
Average Value of Boat Ramp and Dock Access by Respondents	2.43
Average Value of Crowd Level by Respondents	3.00
Average Value of Facilities by Respondents	2.38

Ranking: 1=Very Good; 2=Good; 3=Satisfactory; 4=Poor; and, 5=Very Poor.

### Summer Season Donner Lake Alternative Lake Level Sensitivity

The number of respondents that indicate a change in the number of vacation-home visits at alternative lake-levels for Donner Lake during the summer season is 1. The number of respondents that indicate no change in the number of vacation-home visits at alternative lake levels for Donner Lake during the summer season is 18.

Table 7.4-11 provides the summer season Donner Lake alternative lake-level sensitivity.



**Table 7.4-11. Summer Season Donner Lake Alternative Lake-Level Sensitivity.**

Number of Respondents that indicated a Change in the Number of Vacation-Home Visits at Alternative Lake-Levels	1
Number of Respondents that indicated No Change in the Number of Vacation-Home Visits at Alternative Lake-Levels	18
Total Number of Respondents	19

## Summer Season Visitation Expenditures

Visitation expenditures by respondents during the summer season are highest on restaurant and groceries.

Summer season visitation expenditures by respondents are presented in Table 7.4-12. Average expenditure per visit, average expenditure per visit per day, and average expenditure per visit per day per person are given for restaurant, groceries, gasoline, other shopping, recreation rental, golf fees, other user fees, gaming, and other.

Respondents indicate an average total expenditure per visit of \$560.25, an average total expenditure per visit per day of \$143.03, and an average total expenditure per visit per day per person of \$26.12.

Vacation-home rent is treated separately and not included in the above expenditure values.

**Table 7.4-12. Summer Season Visitation Expenditures.**

Average Expenditure per Visit on Restaurant by Respondents	132.50
Average Expenditure per Visit on Groceries by Respondents	165.31
Average Expenditure per Visit on Gasoline by Respondents	43.75
Average Expenditure per Visit on Other Shopping by Respondents	86.88
Average Expenditure per Visit on Recreation Rental by Respondents	63.06
Average Expenditure per Visit on Golf Fees by Respondents	25.00
Average Expenditure per Visit on Other User Fees by Respondents	25.00
Average Expenditure per Visit on Gaming by Respondents	18.75
Average Expenditure per Visit on Other by Respondents	0.00
<b>Average Total Expenditure per Visit by Respondents</b>	<b>\$560.25</b>
Average Expenditure per Visit per Day on Restaurant by Respondents	35.33
Average Expenditure per Visit per Day on Groceries by Respondents	40.58
Average Expenditure per Visit per Day on Gasoline by Respondents	11.07
Average Expenditure per Visit per Day on Other Shopping by Respondents	21.03
Average Expenditure per Visit per Day on Recreation Rental by Respondents	12.69
Average Expenditure per Visit per Day on Golf Fees by Respondents	15.00
Average Expenditure per Visit per Day on Other User Fees by Respondents	4.65
Average Expenditure per Visit per Day on Gaming by Respondents	2.68
Average Expenditure per Visit per Day on Other by Respondents	0.00
<b>Average Total Expenditure per Visit per Day by Respondents</b>	<b>\$143.03</b>
Average Expenditure per Visit per Day per Person on Restaurant by Respondents	6.41
Average Expenditure per Visit per Day per Person on Groceries by Respondents	7.90
Average Expenditure per Visit per Day per Person on Gasoline by Respondents	1.99
Average Expenditure per Visit per Day per Person on Other Shopping by Respondents	4.24
Average Expenditure per Visit per Day per Person on Recreation Rental by Respondents	2.23
Average Expenditure per Visit per Day per Person on Golf Fees by Respondents	1.88
Average Expenditure per Visit per Day per Person on Other User Fees by Respondents	0.99
Average Expenditure per Visit per Day per Person on Gaming by Respondents	0.48
Average Expenditure per Visit per Day per Person on Other by Respondents	0.00
<b>Average Total Expenditure per Visit per Day per Person by Respondents</b>	<b>\$26.12</b>

## **Summer Season Vacation-Home Rent Expenditure**

The average rent expenditure per visit by respondents on vacation-home rent during the summer season is \$671.88.

The summer season vacation-home rent expenditure by respondents is provided in Table 7.4-13. An average rent expenditure per visit with an average rent expenditure per visit per day and average rent expenditure per visit per day per person is given.

Respondents indicate an average rent expenditure per visit of \$671.88, and average rent expenditure per visit per day of \$165.53, and an average rent expenditure per visit per day per person of \$29.00.

**Table 7.4-13. Summer Season Vacation-Home Rent Expenditure.**

<b>Average Rent Expenditure per Visit by Respondents</b>	<b>\$671.88</b>
<b>Average Rent Expenditure per Visit per Day by Respondents</b>	<b>\$165.53</b>
<b>Average Rent Expenditure per Visit per Day per Person by Respondents</b>	<b>\$29.00</b>

## Comments

Excerpts taken from a few comments made by respondents on renting a vacation-home in the Truckee area are listed below.

1. "...Great location and cute town. We hope it doesn't Grow too much. Beautiful area."
2. "We love the Truckee area and have increased the amount of time spent there over Tahoe due to water level in Tahoe and the crowds there. If the lake level were decreased I'm sure it would influence us to choose another place to stay but that would be sad as we have truly grown to love Truckees beauty and small town charm."
3. "I rent in the Tahoe area because the climate is radically different from that in the Bay Area during the winter and because of the social interaction we can create by gathering friends in a large house. I would come more often if real-estate rental were cheaper."
4. "We have enjoyed coming to Truckee to play in the adult coed soccer tournament..."
5. "We are not boaters but came for some snow fun and minimal skiing."
6. "We rent a home in Truckee for the summer months of July, Aug, Sept. We live in the desert so we come there for the summer climate -we spend most of our time golfing - Rent boats on Lake Tahoe and Donner once in a while - so I am not qualified to answer detail questions"
7. "Typically we enjoy the Truckee area most in the winter. Usually we rent a home in the winter months from one of the property management offices. Skiing is our favorite sport."
8. "This was the first time we rented a vacation home. Have stayed in hotels before. Really did enjoy it...have decided to buy a home in Incline Village. We are selling our home in California."
9. "We don't visit during the summer months...enjoy Truckee area best....It's also near enough to everything we need."

10. "We tend to rent in Tahoe-Donner for the following reasons: ...Rustic Truckee vs "Tacky" South Shore...Donner Lake setting vs Tahoe...trains above Donner Lake...family atmosphere...walking/hiking around TD and Donner lake... Casinos in Boomtown..." "Concerns: water-level..skidoo drivers rude and out of control...Tahoe-Donner needs to offer renters a pass option for amenities... it is often impossible to plan ahead with small children - they offer no refund on unused amenity tickets..."

### **7.5. Estimation of the Expenditure Function**

Expenditures of camping and day use visitors at each of the sites are calculated using an expenditure function. Specification of the expenditure function and estimation of the expenditure function are as follows.



### Specification of the Expenditure Function

The expenditure function is an important ingredient of the modern theory of consumer behavior. It shows the minimal expenditures necessary to achieve a given utility level for a particular set of prices. The properties of the expenditure function in the areas of theoretical and applied analysis of consumer behavior are developed in the studies by Barton and Bohm (1982), Deaton and Muelbauer (1980), Hicks (1946), Samuelson (1947), Silberberg (1978), Theil (1975), and Varian (1992). Let  $E(P, U)$  be an expenditure function, where  $P$  is a vector of commodity prices and  $U$  is a given level of utility. The expenditure function is the solution to the following problem:

$$E(P, U) = \min PX \quad (7.5-1)$$

such that  $U(X) \geq U$

where  $X$  is a vector of non-negative quantities of goods. The solution to this optimization problem is the expenditure function that gives the minimum cost of achieving the fixed level of utility. For the expenditure function  $E(P, U)$  to be well behaved, it must have the following properties: (i)  $E(P, U)$  is non decreasing in  $P$ , (ii)  $E(P, U)$  is homogeneous of the degree 1 in  $P$ , (iii)  $E(P, U)$  is concave in  $P$ , (iv)  $E(P, U)$  is continuous in  $P$ , for  $P > 0$ , and (iv) if  $X(P, U)$  is the expenditure-minimizing bundle necessary to achieve utility level  $U$  at prices  $P$ , then  $X(P, U) = \partial E(P, U) / \partial P$  assuming the derivative exists and that  $P > 0$ .

The application of the expenditure function in empirical studies of consumer behavior requires the availability of observed market prices on goods and the existence of a well-behaved utility function. In the area of demand for recreation activities, there are no market-based transactions to determine observed market prices. Consequently, the notion of a regular utility function has to be modified in developing the expenditure function for the recreation activities. Let  $F$  be a vector of the time spent on a series of recreational activities by an individual at a particular site. The indirect utility function  $V$  for recreational activities for this individual is:

$$V = V(F, S, I) \quad (7.5-2)$$

where  $S$  is a vector of site characteristics that captures the substitutability of visits across various sites and  $I$  is the total budget allocated by an individual to participate in all the recreational activities included in  $F$ . The expenditure function  $E$  dual to the indirect utility function in (7.5-2) is the minimum expenditure required for the individual to participate in all the recreational activities in  $F$ , given the site characteristics in  $S$ . The expenditure function  $E$  derived from (7.5-2) is:

$$E = I = V^{-1}(F, S) \quad (7.5-3)$$

The expenditure function in (7.5-3) can also be modified to include the variable of the total number of visitors to the site. Let N be the total number of visitors. Then the expenditures function is:

$$E = V^{-1} (F, S, N) \quad (7.5-4)$$

The specification of the expenditure function in (7.5-4) is an empirical issue and it could be determined upon a estimation model selection technique, e.g., the Box-Cox estimation technique. One notable feature of the expenditure function in (7.5-4) is that it can be used to estimate expenditures of recreational activities at a particular site.

The expenditure function in (7.5-4) is used to evaluate the expenditures of recreational activities at the following seven sites in California and Nevada: Upper Truckee River, Donner Lake, Prosser Reservoir, Stampede Reservoir, Boca Reservoir, Lower Truckee River, and Pyramid Lake. The attributes of the characteristics of each site are captured by including dummy variable for each site in S. The definition of the dummy variables included in S are: UTR = 1 if the visitation site is Upper Truckee River and 0 otherwise; DL = 1 if the visitation site is Donner Lake and 0 otherwise; PR = 1 if the visitation site is Prosser Reservoir and 0 otherwise; SR = 1 if the visitation site is Stampede Reservoir and 0 otherwise; BR = 1 if the visitation site is Boca Reservoir and 0 otherwise; LTR = 1 if the visitation site is Lower Truckee River and 0 otherwise; and, PL = 1 if the visitation site is Pyramid Lake and 0 otherwise. The hours spent on each of the following eleven recreational activities are included in F. The activities were determined according to their availability and popularity at the sites. The activities are: picnicking, camping, fishing, swimming, boating, fishing from boat, water skiing, jet skiing, rafting, kayaking, biking, hiking, and other activities. To capture the effect of the type of visitor at a given site on their expenditures, i.e., camping versus day use, a dummy variable D, defined as D = 1 if camping visitor and 0 if day use visitor, is included in the expenditure function in (7.5-4). Following the categorization of expenditures on the recreation survey, the expenditures by a visitor to a given site are identified as licenses, camping fees, hotel or motel, restaurant, groceries, equipment and supplies, rental, fuel, and other. Using the above specification of the variables, the expenditure function in (7.5-4) can now be presented as:

$$E_i = V^{-1} (UTR, DL, PR, SR, BR, LTR, PL, D, \sum_{j=1}^{13} F_j, N); i = 1, \dots, 7 \quad (7.5-5)$$

The functional form specification of the expenditure function in (7.5-5) is an empirical issue and it will be determined using the Box-Cox flexible functional form technique. The Box-Cox specification of the expenditure function in (7.5-5) is:

$$\frac{E_i^\lambda - 1}{\lambda} = \beta_1 UTR + \beta_2 DL + \beta_3 PR + \beta_4 SR + \beta_5 BR + \beta_6 LTR + \beta_7 PL + \beta_8 D \quad (7.5-6)$$

$$+ \sum_{j=1}^{21} \beta_j \left( \frac{F_j^\lambda - 1}{\lambda} \right) + \beta_{22} \left( \frac{N^\lambda - 1}{\lambda} \right) + U$$

where  $U$  is the stochastic error term,  $\beta$  is the slope parameter, and  $\lambda$  is the transformation parameter. The transformation parameter may take a wide range of values that would determine the particular functional form that the variable subject to the Box-Cox transformation will assume. For example, one gets a logarithmic transformation for a variable if  $\lambda$  is equal to zero. All of the coefficients of the expenditure function in (7.5-5), including  $\lambda$ , will be estimated using the estimation of the following log-likelihood function:

$$L(\lambda, \beta, \sigma^2; E, X) = -\frac{T}{2} \ln(2\pi\sigma^2) - \frac{1}{2\sigma^2} (E^\lambda - X^\lambda B) / (E^\lambda - X^\lambda B) \quad (7.5-7)$$

$$+ \ln(J); \text{ and } J = \det \left[ \frac{\partial E^\lambda}{\partial E} \right] = \prod_{t=1}^T E_t^{\lambda-1}$$

where  $X$  is a vector of observations on all the exogenous variables,  $B$  is a vector of all the slope parameters to be estimated, and  $T$  is the number of observations.

### Estimation of the Expenditure Function

The data collected through the recreation survey for the seven sites is used to estimate the expenditure function in (7.5-6). A total number of 432 out of the 443 complete questionnaires are used in the estimation. The initial diagnosis of the data revealed that there are a large number of zeros on most of the recreational activities and a number of expenditure categories making the estimation of the expenditure function in its generalized form in (7.5-6) impossible. A number of alternatives to combine some of the recreational activities are tried to estimate a modified form of the expenditure function in (7.5-6). All of these attempts resulted into some difficulties in estimation of the expenditure function in (7.5-6).

The final modified form of the expenditure function in (7.5-6) that provides meaningful estimation results is:

$$\begin{aligned} \frac{E^\lambda - 1}{\lambda} = & \beta_1 UTR + \beta_2 DL + \beta_3 PR + \beta_4 SR + \beta_5 BR + \beta_6 LTR + \beta_7 PL + \beta_8 D \quad (7.5-8) \\ & + \beta_9 \left( \frac{F^\lambda - 1}{\lambda} \right) + \beta_{10} \left( \frac{N^\lambda - 1}{\lambda} \right) + U \end{aligned}$$

The expenditure function expressed in simple notation becomes:

$$\begin{aligned} \ln E = & \beta_1 UTR + \beta_2 DL + \beta_3 PR + \beta_4 SR + \beta_5 BR + \beta_6 LTR + \beta_7 PL + \beta_8 D \quad (7.5-9) \\ & + \beta_9 \ln F + \beta_{10} \ln N + U \end{aligned}$$

where E is the sum of the nine expenditure categories per day, F is the sum of the hours spent per day by a visitor on the thirteen categories of recreational activities, and N is the group size. The Ln is an abbreviation for natural logarithm.

Using the survey observations on the variables E, F, N, the seven location dummy variables, and the type of visitor dummy variable, the expenditure function in (7.5-8) or (7.5-9) is estimated having the following results.

$$\begin{aligned} \text{LnE} = & 3.6390\text{UTR} + 3.0354\text{DL} + 2.8812\text{PR} + 3.1279\text{SR} + 2.9892\text{BR} & (7.5-10) \\ & (12.20) \quad (13.07) \quad (8.79) \quad (12.16) \quad (12.21) \\ & + 2.7781\text{LTR} + 3.0575\text{PL} - 0.4474\text{D} + 0.2320\text{LnF} + 0.3195\text{LnN} \\ & (7.73) \quad (13.76) \quad (-3.38) \quad (2.15) \quad (4.10) \end{aligned}$$

The numbers in the parentheses are the asymptotic t-ratios for 452 degrees of freedom. The adjusted  $R^2$  is 0.0753 for the 462 observations. The 473 observations were edited down to 462. Observations that were deleted were observations having a zero for total expenditures, or a zero for total recreation activity hours, or a zero for group size. The camping and day use visitor expenditure function observations are given in Table 7.5-1.

The maximum likelihood ( ML ) ratio test is then used to check the validity of alternative functional specifications of the expenditure function for specific value of  $\lambda$ , i.e., logarithmic (  $\lambda = 0$  ) and linear (  $\lambda = 1$  ) functional forms. Let S denote the parameter space under the Box-Cox specification and s denote the subspace of S restricted by the null hypothesis (  $H^0$  ). The ML ratio test to test for a given functional form under  $H^0$  is a large sample test and can be conducted as follows:

$$d = -2 [ L ( S ) - L ( s ) ] \quad (7.5-11)$$

where  $L ( S )$  is the maximum of the log likelihood function under S and  $L ( s )$  is the maximum value of the log likelihood function under s. If  $H^0$  is true, the statistic d has the limiting chi-squared (  $\chi^2$  ) with n degrees of freedom, where n is the number of restrictions imposed by  $H^0$ .

The maximum likelihood estimation of  $\lambda$  in (7.5-8) is 0.07 with the maximum of the log likelihood function  $L(S)$  of  $-803.568$ . Using estimates of the maximum log likelihood function of  $\lambda$ ,  $L(s)$  for the logarithmic and linear specifications of the expenditure function, the test statistic in (7.5-11) is calculated. The test results provide evidence to accept  $H^0: \lambda = 0$  and to reject  $H^0: \lambda = 1$  against the alternative hypothesis that  $H^0: \lambda = 0.07$ . In other words, the final functional specification of the expenditure function is in logarithmic functional form.

The estimated expenditure function predicts the logarithm of the average expenditures per day at a particular site for both camping and day use visitors for given values of the logarithm of their hours of non-camping recreation activity and the logarithm of their group size. Then the average expenditures per day are determined by taking the anti-log of the logarithm of the average expenditures. This procedure is shown below by site.

#### Upper Truckee River

##### Camping Visitor Group Expenditures per Day

$$\begin{aligned}\text{LnE} = & 3.6390(1) + 3.0354(0) + 2.8812(0) + 3.1279(0) + 2.9892(0) \\ & + 2.7781(0) + 3.0575(0) - 0.4474(1) + 0.2320\text{Ln}(5.50) + 0.3195(3.47)\end{aligned}$$

$$\text{LnE} = 3.6390 - 0.4474 + 0.2320(1.70) + 0.3195(1.24)$$

$$\text{LnE} = 3.9822$$

$$E = \$53.63$$

##### Day Use Visitor Group Expenditures per Day

$$\begin{aligned}\text{LnE} = & 3.6390(1) + 3.0354(0) + 2.8812(0) + 3.1279(0) + 2.9892(0) \\ & + 2.7781(0) + 3.0575(0) - 0.4474(0) + 0.2320\text{Ln}(3.00) + 0.3195\text{Ln}(5.50)\end{aligned}$$

$$\text{LnE} = 3.6390 + 0.2320(1.10) + 0.3195(1.70)$$

$$\text{LnE} = 4.4374$$

$$E = \$84.55$$

## Donner Lake

### Camping Visitor Group Expenditures per Day

$$\begin{aligned}\text{LnE} = & 3.6390(0) + 3.0354(1) + 2.8812(0) + 3.1279(0) + 2.9892(0) \\ & + 2.7781(0) + 3.0575(0) - 0.4474(1) + 0.2320\text{Ln}(8.29) + 0.3195\text{Ln}(5.24)\end{aligned}$$

$$\text{LnE} = 3.0354 - 0.4474 + 0.2320(2.12) + 0.3195(1.66)$$

$$\text{LnE} = 3.6102$$

$$E = \$36.97$$

### Day Use Visitor Group Expenditures per Day

$$\begin{aligned}\text{LnE} = & 3.6390(0) + 3.0354(1) + 2.8812(0) + 3.1279(0) + 2.9892(0) \\ & + 2.7781(0) + 3.0575(0) - 0.4474(0) + 0.2320\text{Ln}(5.63) + 0.3195\text{Ln}(5.02)\end{aligned}$$

$$\text{LnE} = 3.0354 + 0.2320(1.73) + 0.3195(1.61)$$

$$\text{LnE} = 3.9512$$

$$E = \$52.00$$

## Prosser Reservoir

### Camping Visitor Group Expenditures per Day

$$\begin{aligned}\text{LnE} = & 3.6390(0) + 3.0354(0) + 2.8812(1) + 3.1279(0) + 2.9892(0) \\ & + 2.7781(0) + 3.0575(0) - 0.4474(1) + 0.2320\text{Ln}(7.67) + 0.3195\text{Ln}(3.73)\end{aligned}$$

$$\text{LnE} = 2.8812 - 0.4474 + 0.2320(2.04) + 0.3195(1.32)$$

$$\text{LnE} = 3.3288$$

$$E = \$27.90$$

### Day Use Visitor Group Expenditures per Day

$$\begin{aligned}\text{LnE} = & 3.6390(0) + 3.0354(0) + 2.8812(1) + 3.1279(0) + 2.9892(0) \\ & + 2.7781(0) + 3.0575(0) - 0.4474(0) + 0.2320\text{Ln}(3.38) + 0.3195\text{Ln}(3.13)\end{aligned}$$

$$\text{LnE} = 2.8812 + 0.2320(1.22) + 0.3195(1.14)$$

$$\text{LnE} = 3.5284$$

$$E = \$34.07$$



## Stampede Reservoir

### Camping Visitor Group Expenditures per Day

$$\begin{aligned}\text{Ln}E &= 3.6390(0) + 3.0354(0) + 2.8812(0) + 3.1279(1) + 2.9892(0) \\ &\quad + 2.7781(0) + 3.0575(0) - 0.4474(1) + 0.2320\text{Ln}(7.82) + 0.3195\text{Ln}(5.12)\end{aligned}$$

$$\text{Ln}E = 3.1279 - 0.4474 + 0.2320(2.06) + 0.3195(1.63)$$

$$\text{Ln}E = 3.6792$$

$$E = \$39.61$$

### Day Use Visitor Group Expenditures per Day

$$\begin{aligned}\text{Ln}E &= 3.6390(0) + 3.0354(0) + 2.8812(0) + 3.1279(1) + 2.9892(0) \\ &\quad + 2.7781(0) + 3.0575(0) - 0.44743(0) + 0.2320\text{Ln}(5.67) + 0.3195\text{Ln}(3.89)\end{aligned}$$

$$\text{Ln}E = 3.1279 + 0.2320(1.74) + 0.3195(1.36)$$

$$\text{Ln}E = 3.9661$$

$$E = \$52.78$$

## Boca Reservoir

### Camping Visitor Group Expenditures per Day

$$\begin{aligned}\text{LnE} &= 3.6390(0) + 3.0354(0) + 2.8812(0) + 3.1279(0) + 2.9892(1) \\ &\quad + 2.7781(0) + 3.0575(0) - 0.4474(1) + 0.2320\text{Ln}(7.83) + 0.3195\text{Ln}(5.10)\end{aligned}$$

$$\text{LnE} = 2.9892 - 0.44743 + 0.2320(2.05) + 0.3195(1.63)$$

$$\text{LnE} = 3.5382$$

$$E = \$34.40$$

### Day Use Visitor Group Expenditures per Day

$$\begin{aligned}\text{LnE} &= 3.6390(0) + 3.0354(0) + 2.8812(0) + 3.1279(0) + 2.9892(1) \\ &\quad + 2.7781(0) + 3.0575(0) - 0.4474(0) + 0.2320\text{Ln}(5.24) + 0.3195\text{Ln}(5.02)\end{aligned}$$

$$\text{LnE} = 2.9892 + 0.2320(1.66) + 0.3195(1.61)$$

$$\text{LnE} = 3.8887$$

$$E = \$48.85$$

## Lower Truckee River

### Camping Visitor Group Expenditures per Day

$$\begin{aligned}\text{LnE} &= 3.6390(0) + 3.0354(0) + 2.8812(0) + 3.1279(0) + 2.9892(0) \\ &\quad + 2.7781(1) + 3.0575(0) - 0.4474(1) + 0.2320\text{Ln}(3.00) + 0.3195\text{Ln}(2.00)\end{aligned}$$

$$\text{LnE} = 2.7781 - 0.4474 + 0.2320(1.10) + 0.3195(0.69)$$

$$\text{LnE} = 2.8064$$

$$E = \$16.55$$

### Day Use Visitor Group Expenditures per Day

$$\begin{aligned}\text{LnE} &= 3.6390(0) + 3.0354(0) + 2.8812(0) + 3.1279(0) + 2.9892(0) \\ &\quad + 2.7781(1) + 3.0575(0) - 0.4474(0) + 0.2320\text{Ln}(3.96) + 0.3195\text{Ln}(2.29)\end{aligned}$$

$$\text{LnE} = 2.7781 + 0.2320(1.38) + 0.3195(0.83)$$

$$\text{LnE} = 3.3635$$

$$E = \$28.89$$

## Pyramid Lake

### Camping Visitor Group Expenditures per Day

$$\begin{aligned}\text{LnE} &= 3.6390(0) + 3.0354(0) + 2.8812(0) + 3.1279(0) + 2.9892(0) \\ &\quad + 2.7781(0) + 3.0575(1) - 0.4474(1) + 0.2320\text{Ln}(8.20) + 0.3195\text{Ln}(4.72)\end{aligned}$$

$$\text{LnE} = 3.0575 - 0.4474 + 0.2320(2.10) + 0.3195(1.55)$$

$$\text{LnE} = 3.5925$$

$$E = \$36.32$$

### Day Use Visitor Group Expenditures per Day

$$\begin{aligned}\text{LnE} &= 3.6390(0) + 3.0354(0) + 2.8812(0) + 3.1279(0) + 2.9892(0) \\ &\quad + 2.7781(0) + 3.0575(1) - 0.4474(0) + 0.2320\text{Ln}(5.74) + 0.3195\text{Ln}(5.92)\end{aligned}$$

$$\text{LnE} = 3.0575 + 0.2320(1.75) + 0.3195(1.78)$$

$$\text{LnE} = 4.0322$$

$$E = \$56.38$$

The above camping and day use visitor expenditure function values are presented by site in Table 7.5-2.

Table 7.5-1. Camping and Day Use Visitor Expenditure Function Observations.

Observation Number	Year	Site	Questionnaire Number	Visitor Type	Expenditures	Number of Days	Expenditures per Day	Upper Truckee River UTR	Donner Lake DL	Promer Reservoir PR	Stampede Reservoir SR	Boon Reservoir BR	Lower Truckee River LTR	Pyramid Lake PL	Camping Visitor	Activity Hours	Group Size
1	1993	UTR	1	CP	267.00	7.0	38.14	1	0	0	0	0	0	0	1	2.5	4.0
2	1993	UTR	2	CP	240.00	10.0	24.00	1	0	0	0	0	0	0	1	6.0	4.0
3	1993	UTR	3	CP	100.00	2.0	50.00	1	0	0	0	0	0	0	1	3.0	4.0
4	1993	UTR	4	CP	290.00	2.0	145.00	1	0	0	0	0	0	0	1	6.0	4.0
5	1993	UTR	5	CP	183.50	3.0	61.17	1	0	0	0	0	0	0	1	5.0	2.0
6	1993	UTR	6	CP	83.00	7.0	11.86	1	0	0	0	0	0	0	1	8.0	2.0
7	1993	UTR	7	CP	50.00	1.0	50.00	1	0	0	0	0	0	0	1	2.0	6.0
8	1993	UTR	8	CP	71.00	1.0	71.00	1	0	0	0	0	0	0	1	7.0	4.0
9	1993	UTR	9	CP	36.00	3.0	12.00	1	0	0	0	0	0	0	1	2.0	4.0
10	1993	UTR	10	CP	198.00	3.0	39.60	1	0	0	0	0	0	0	1	8.0	2.0
11	1993	UTR	11	CP	78.00	2.0	39.00	1	0	0	0	0	0	0	1	2.0	4.0
12	1993	UTR	12	CP	223.00	4.0	55.75	1	0	0	0	0	0	0	1	11.0	6.0
13	1993	UTR	13	CP	290.00	14.0	20.71	1	0	0	0	0	0	0	1	14.0	2.0
14	1993	UTR	14	CP	75.00	1.0	75.00	1	0	0	0	0	0	0	1	4.0	2.0
15	1993	UTR	15	CP	317.00	10.0	31.70	1	0	0	0	0	0	0	1	2.0	2.0
16	1993	UTR	1	DU	450.00	0.0	450.00	1	0	0	0	0	0	0	0	3.0	7.0
17	1993	UTR	2	DU	540.00	0.0	540.00	1	0	0	0	0	0	0	0	3.0	4.0
18	1993	PR	1	DU	37.90	0.0	37.90	0	0	1	0	0	0	0	0	6.0	2.0
19	1993	PR	2	DU	54.00	0.0	54.00	0	0	1	0	0	0	0	0	2.0	1.0
20	1993	PR	3	DU	732.00	0.0	732.00	0	0	1	0	0	0	0	0	4.8	8.0
21	1993	PR	4	DU	268.00	0.0	268.00	0	0	1	0	0	0	0	0	3.0	5.0
22	1993	PR	5	DU	24.50	0.0	24.50	0	0	1	0	0	0	0	0	3.0	2.0
23	1993	PR	6	DU	623.00	0.0	623.00	0	0	1	0	0	0	0	0	2.0	2.0
24	1993	SR	1	DU	145.00	3.0	48.33	0	0	0	1	0	0	0	1	3.0	8.0
25	1993	SR	2	DU	66.00	3.0	22.00	0	0	0	1	0	0	0	1	8.0	4.0
26	1993	SR	3	DU	177.50	2.0	88.75	0	0	0	1	0	0	0	1	4.0	4.0
27	1993	SR	4	DU	137.00	2.0	68.50	0	0	0	1	0	0	0	1	2.0	2.0
28	1993	SR	5	DU	163.00	3.0	54.33	0	0	0	1	0	0	0	1	2.0	3.0
29	1993	SR	6	DU	180.00	3.0	60.00	0	0	0	1	0	0	0	1	9.0	7.0
30	1993	SR	7	DU	421.00	7.0	60.14	0	0	0	1	0	0	0	1	9.0	9.0
31	1993	SR	8	DU	110.90	2.0	55.45	0	0	0	1	0	0	0	1	7.0	2.0
32	1993	SR	9	DU	500.00	2.0	250.00	0	0	0	1	0	0	0	1	5.0	14.0
33	1993	SR	10	DU	239.00	3.0	79.67	0	0	0	1	0	0	0	1	4.0	8.0
34	1993	SR	11	DU	76.00	3.0	25.33	0	0	0	1	0	0	0	1	5.0	1.0
35	1993	SR	12	DU	56.00	2.0	28.00	0	0	0	1	0	0	0	1	5.0	2.0
36	1993	SR	13	DU	91.00	5.0	18.20	0	0	0	1	0	0	0	1	5.0	2.0
37	1993	SR	14	DU	325.00	4.0	81.25	0	0	0	1	0	0	0	1	5.0	2.0
38	1993	SR	15	DU	315.00	3.0	105.00	0	0	0	1	0	0	0	1	13.0	10.0
39	1993	SR	16	DU	312.00	2.0	156.00	0	0	0	1	0	0	0	1	8.0	5.0
40	1993	SR	17	DU	167.20	2.0	83.60	0	0	0	1	0	0	0	1	6.0	3.0
41	1993	SR	18	DU	76.00	1.0	76.00	0	0	0	1	0	0	0	1	1.5	2.0
42	1993	SR	19	DU	90.95	2.0	45.48	0	0	0	1	0	0	0	1	5.0	6.0
43	1993	SR	20	DU	722.00	10.0	72.20	0	0	0	1	0	0	0	1	12.0	19.0
44	1993	SR	21	DU	48.00	3.0	16.00	0	0	0	1	0	0	0	1	5.0	2.0
45	1993	SR	22	DU	239.00	8.0	29.88	0	0	0	1	0	0	0	1	3.0	4.0
46	1993	SR	23	DU	240.00	2.0	120.00	0	0	0	1	0	0	0	1	10.0	8.0
47	1993	SR	24	DU	266.00	7.0	38.00	0	0	0	1	0	0	0	1	6.5	5.0
48	1993	SR	25	DU	123.00	6.0	20.50	0	0	0	1	0	0	0	1	8.0	4.0
49	1993	SR	26	DU	169.00	6.0	28.17	0	0	0	1	0	0	0	1	2.0	2.0
50	1993	SR	27	DU	77.00	2.0	38.50	0	0	0	1	0	0	0	1	13.0	2.0
51	1993	SR	28	DU	199.00	2.0	99.50	0	0	0	1	0	0	0	1	4.0	12.0
52	1993	SR	29	DU	249.00	3.0	83.00	0	0	0	1	0	0	0	1	5.0	13.0
53	1993	SR	30	DU	90.00	2.0	45.00	0	0	0	1	0	0	0	1	5.0	2.0
54	1993	SR	31	DU	361.00	7.0	51.57	0	0	0	1	0	0	0	1	10.0	4.0
55	1993	SR	32	DU	65.50	5.0	13.10	0	0	0	1	0	0	0	1	5.0	2.0
56	1993	SR	33	DU	230.00	3.0	76.67	0	0	0	1	0	0	0	1	8.0	7.0
57	1993	SR	1	DU	43.00	0.0	43.00	0	0	0	1	0	0	0	0	3.0	4.0
58	1993	SR	2	DU	204.00	0.0	204.00	0	0	0	1	0	0	0	0	5.0	8.0
59	1993	SR	3	DU	15.00	0.0	15.00	0	0	0	1	0	0	0	0	4.0	4.0

Table 7.5-1. Camping and Day Use Visitor Expenditure Function Observations (continue).

Observation Number	Year	Site	Questionnaire Number	Visitor Type	Expenditure	Number of Days	Expenditure per Day	Upper Truckee River UTR	Donner Lake DL	Promer Reservoir PR	Stampede Reservoir SR	Boca Reservoir BR	Lower Truckee River LTR	Pyramid Lake PL	Camping Visitor	Activity Hours	Group Size
60	1993	SR	4	DU	271.00	0.0	271.00	0	0	0	1	0	0	0	0	8.0	2.0
61	1993	SR	5	DU	158.00	0.0	158.00	0	0	0	1	0	0	0	0	5.0	2.0
62	1993	SR	6	DU	137.00	0.0	137.00	0	0	0	1	0	0	0	0	5.0	2.0
63	1993	SR	7	DU	60.00	0.0	60.00	0	0	0	1	0	0	0	0	10.0	4.0
64	1993	SR	8	DU	35.00	0.0	35.00	0	0	0	1	0	0	0	0	8.0	2.0
65	1993	SR	9	DU	150.00	0.0	150.00	0	0	0	1	0	0	0	0	3.0	7.0
66	1993	BR	1	CP	63.00	2.0	31.50	0	0	0	0	1	0	0	1	7.0	4.0
67	1993	BR	2	CP	175.00	10.0	17.50	0	0	0	0	1	0	0	1	3.0	2.0
68	1993	BR	3	CP	124.00	2.0	62.00	0	0	0	0	1	0	0	1	7.0	4.0
69	1993	BR	4	CP	100.00	14.0	7.14	0	0	0	0	1	0	0	1	4.0	4.0
70	1993	BR	1	DU	30.00	0.0	30.00	0	0	0	0	1	0	0	0	5.0	5.0
71	1993	BR	2	DU	60.00	0.0	60.00	0	0	0	0	1	0	0	0	6.0	9.0
72	1993	BR	3	DU	70.00	0.0	70.00	0	0	0	0	1	0	0	0	8.0	4.0
73	1993	BR	4	DU	30.00	0.0	30.00	0	0	0	0	1	0	0	0	4.0	2.0
74	1993	BR	5	DU	465.00	0.0	465.00	0	0	0	0	1	0	0	0	6.0	2.0
75	1993	BR	6	DU	110.00	0.0	110.00	0	0	0	0	1	0	0	0	2.0	18.0
76	1993	BR	7	DU	73.00	0.0	73.00	0	0	0	0	1	0	0	0	5.0	3.0
77	1993	BR	8	DU	30.00	0.0	30.00	0	0	0	0	1	0	0	0	2.0	2.0
78	1993	BR	9	DU	130.00	0.0	130.00	0	0	0	0	1	0	0	0	8.0	4.0
79	1993	BR	10	DU	10.00	0.0	10.00	0	0	0	0	1	0	0	0	6.0	18.0
80	1993	BR	11	DU	12.00	0.0	12.00	0	0	0	0	1	0	0	0	5.0	2.0
81	1993	BR	12	DU	12.00	0.0	12.00	0	0	0	0	1	0	0	0	5.0	4.0
82	1993	BR	13	DU	10.00	0.0	10.00	0	0	0	0	1	0	0	0	4.0	1.0
83	1993	BR	14	DU	46.50	0.0	46.50	0	0	0	0	1	0	0	0	5.0	2.0
84	1993	BR	15	DU	129.00	0.0	129.00	0	0	0	0	1	0	0	0	6.0	5.0
85	1993	BR	16	DU	41.00	0.0	41.00	0	0	0	0	1	0	0	0	8.0	3.0
86	1993	BR	17	DU	20.00	0.0	20.00	0	0	0	0	1	0	0	0	2.0	3.0
87	1993	BR	18	DU	32.00	0.0	32.00	0	0	0	0	1	0	0	0	3.0	6.0
88	1993	BR	19	DU	70.00	0.0	70.00	0	0	0	0	1	0	0	0	6.0	7.0
89	1993	BR	20	DU	25.00	0.0	25.00	0	0	0	0	1	0	0	0	3.0	6.0
90	1993	BR	21	DU	1910.00	0.0	1910.00	0	0	0	0	1	0	0	0	8.0	3.0
91	1993	BR	22	DU	42.50	0.0	42.50	0	0	0	0	1	0	0	0	5.0	2.0
92	1993	BR	23	DU	220.00	0.0	220.00	0	0	0	0	1	0	0	0	2.0	10.0
93	1993	BR	24	DU	42.00	0.0	42.00	0	0	0	0	1	0	0	0	8.0	4.0
94	1993	BR	25	DU	25.00	0.0	25.00	0	0	0	0	1	0	0	0	4.0	3.0
95	1993	BR	26	DU	10.00	0.0	10.00	0	0	0	0	1	0	0	0	2.0	2.0
96	1993	BR	27	DU	20.00	0.0	20.00	0	0	0	0	1	0	0	0	5.0	1.0
97	1993	BR	28	DU	60.00	0.0	60.00	0	0	0	0	1	0	0	0	5.0	4.0
98	1993	BR	29	DU	40.00	0.0	40.00	0	0	0	0	1	0	0	0	6.0	8.0
99	1993	BR	30	DU	30.00	0.0	30.00	0	0	0	0	1	0	0	0	4.0	7.0
100	1993	BR	31	DU	223.00	0.0	223.00	0	0	0	0	1	0	0	0	9.0	1.0
101	1993	BR	32	DU	150.00	0.0	150.00	0	0	0	0	1	0	0	0	6.0	7.0
102	1993	BR	33	DU	10.00	0.0	10.00	0	0	0	0	1	0	0	0	3.0	3.0
103	1993	BR	34	DU	10.00	0.0	10.00	0	0	0	0	1	0	0	0	4.0	1.0
104	1993	BR	35	DU	24.00	0.0	24.00	0	0	0	0	1	0	0	0	5.0	3.0
105	1993	BR	36	DU	37.00	0.0	37.00	0	0	0	0	1	0	0	0	6.0	10.0
106	1993	BR	37	DU	0.50	0.0	0.50	0	0	0	0	1	0	0	0	1.0	2.0
107	1993	BR	38	DU	280.00	0.0	280.00	0	0	0	0	1	0	0	0	12.0	5.0
108	1993	BR	39	DU	90.00	0.0	90.00	0	0	0	0	1	0	0	0	5.0	2.0
109	1993	BR	40	DU	300.00	0.0	300.00	0	0	0	0	1	0	0	0	4.0	3.0
110	1993	LTR	1	CP	35.00	2.0	17.50	0	0	0	0	0	1	0	1	3.0	2.0
111	1993	LTR	1	DU	1.00	0.0	1.00	0	0	0	0	0	1	0	0	4.0	1.0
112	1993	LTR	2	DU	94.00	0.0	94.00	0	0	0	0	0	1	0	0	4.0	5.0
113	1993	LTR	3	DU	151.00	0.0	151.00	0	0	0	0	0	1	0	0	7.0	2.0
114	1993	LTR	4	DU	23.00	0.0	23.00	0	0	0	0	0	1	0	0	4.0	1.0
115	1993	LTR	5	DU	1.00	0.0	1.00	0	0	0	0	0	1	0	0	7.0	2.0
116	1993	LTR	6	DU	45.00	0.0	45.00	0	0	0	0	0	1	0	0	4.0	4.0
117	1993	LTR	7	DU	13.50	0.0	13.50	0	0	0	0	0	1	0	0	5.0	1.0
118	1993	LTR	8	DU	20.00	0.0	20.00	0	0	0	0	0	1	0	0	3.0	2.0

Table 7.5-1. Camping and Day Use Visitor Expenditure Function Observations (continue).

Observation Number	Year	Site	Questionnaire Number	Visitor Type	Expenditures	Number of Days	Expenditures per Day	Upper Truckee River UTR	Donner Lake DL	Promer Reservoir PR	Stampede Reservoir SR	Boca Reservoir BR	Lower Truckee River LTR	Pyramid Lake PL	Camping Visitor	Activity Hours	Group Size
119	1993	LTR	9	DU	21.00	0.0	21.00	0	0	0	0	0	1	0	0	4.0	1.0
120	1993	LTR	10	DU	34.00	0.0	34.00	0	0	0	0	0	1	0	0	2.0	4.0
121	1993	LTR	11	DU	775.00	0.0	775.00	0	0	0	0	0	1	0	0	1.0	1.0
122	1993	LTR	12	DU	44.00	0.0	44.00	0	0	0	0	0	1	0	0	3.0	1.0
123	1993	LTR	13	DU	52.00	0.0	52.00	0	0	0	0	0	1	0	0	3.0	1.0
124	1993	LTR	14	DU	0.50	0.0	0.50	0	0	0	0	0	1	0	0	2.0	1.0
125	1993	LTR	15	DU	70.00	0.0	70.00	0	0	0	0	0	1	0	0	3.0	1.0
126	1993	LTR	16	DU	21.50	0.0	21.50	0	0	0	0	0	1	0	0	4.0	1.0
127	1993	LTR	17	DU	28.50	0.0	28.50	0	0	0	0	0	1	0	0	2.0	5.0
128	1993	LTR	18	DU	182.00	0.0	182.00	0	0	0	0	0	1	0	0	6.0	10.0
129	1993	LTR	19	DU	22.00	0.0	22.00	0	0	0	0	0	1	0	0	3.0	2.0
130	1993	LTR	20	DU	14.00	0.0	14.00	0	0	0	0	0	1	0	0	4.0	2.0
131	1993	LTR	21	DU	21.50	0.0	21.50	0	0	0	0	0	1	0	0	6.0	1.0
132	1993	LTR	22	DU	73.00	0.0	73.00	0	0	0	0	0	1	0	0	3.0	2.0
133	1993	LTR	23	DU	23.00	0.0	23.00	0	0	0	0	0	1	0	0	5.0	2.0
134	1993	LTR	24	DU	42.00	0.0	42.00	0	0	0	0	0	1	0	0	6.0	2.0
135	1993	PL	1	CP	320.00	4.0	80.00	0	0	0	0	0	0	1	1	1.0	2.0
136	1993	PL	2	CP	75.00	3.0	25.00	0	0	0	0	0	0	1	1	7.0	5.0
137	1993	PL	3	CP	170.00	2.0	85.00	0	0	0	0	0	0	1	1	7.0	2.0
138	1993	PL	4	CP	41.00	1.0	41.00	0	0	0	0	0	0	1	1	4.0	2.0
139	1993	PL	5	CP	87.00	1.0	87.00	0	0	0	0	0	0	1	1	12.0	2.0
140	1993	PL	6	CP	162.00	4.0	40.50	0	0	0	0	0	0	1	1	10.0	3.0
141	1993	PL	7	CP	140.80	2.0	70.40	0	0	0	0	0	0	1	1	6.0	5.0
142	1993	PL	8	CP	75.00	3.0	25.00	0	0	0	0	0	0	1	1	8.0	1.0
143	1993	PL	9	CP	195.00	6.0	32.50	0	0	0	0	0	0	1	1	3.0	4.0
144	1993	PL	10	CP	180.00	4.0	45.00	0	0	0	0	0	0	1	1	1.0	6.0
145	1993	PL	1	DU	70.00	0.0	70.00	0	0	0	0	0	0	1	0	5.0	2.0
146	1993	PL	2	DU	20.00	0.0	20.00	0	0	0	0	0	0	1	0	7.0	3.0
147	1993	PL	3	DU	61.00	0.0	61.00	0	0	0	0	0	0	1	0	8.0	5.0
148	1993	PL	4	DU	45.00	0.0	45.00	0	0	0	0	0	0	1	0	5.0	3.0
149	1993	PL	5	DU	45.00	0.0	45.00	0	0	0	0	0	0	1	0	7.0	10.0
150	1993	PL	6	DU	42.00	0.0	42.00	0	0	0	0	0	0	1	0	5.0	5.0
151	1993	PL	7	DU	220.00	0.0	220.00	0	0	0	0	0	0	1	0	6.0	7.0
152	1994	DL	1	CP	48.00	4.0	12.00	0	1	0	0	0	0	0	1	4.0	4.0
153	1994	DL	2	CP	943.80	5.0	188.76	0	1	0	0	0	0	0	1	9.0	6.0
154	1994	DL	3	CP	108.00	3.0	36.00	0	1	0	0	0	0	0	1	6.0	2.0
155	1994	DL	4	CP	335.00	6.0	55.83	0	1	0	0	0	0	0	1	8.0	2.0
156	1994	DL	5	CP	210.00	3.0	70.00	0	1	0	0	0	0	0	1	12.0	4.0
157	1994	DL	6	CP	56.25	2.0	28.13	0	1	0	0	0	0	0	1	12.0	9.0
158	1994	DL	7	CP	160.00	5.0	32.00	0	1	0	0	0	0	0	1	10.0	6.0
159	1994	DL	8	CP	135.00	2.0	67.50	0	1	0	0	0	0	0	1	12.0	2.0
160	1994	DL	9	CP	163.00	1.0	163.00	0	1	0	0	0	0	0	1	6.0	2.0
161	1994	DL	10	CP	48.00	2.0	24.00	0	1	0	0	0	0	0	1	5.0	2.0
162	1994	DL	11	CP	181.00	4.0	45.25	0	1	0	0	0	0	0	1	5.0	14.0
163	1994	DL	12	CP	490.60	4.0	122.65	0	1	0	0	0	0	0	1	10.0	3.0
164	1994	DL	13	CP	980.00	8.0	122.50	0	1	0	0	0	0	0	1	7.0	8.0
165	1994	DL	14	CP	111.00	5.0	22.20	0	1	0	0	0	0	0	1	7.0	2.0
166	1994	DL	15	CP	385.00	8.0	48.13	0	1	0	0	0	0	0	1	11.0	7.0
167	1994	DL	16	CP	10.00	6.0	1.67	0	1	0	0	0	0	0	1	6.0	7.0
168	1994	DL	17	CP	130.00	2.0	65.00	0	1	0	0	0	0	0	1	8.0	3.0
169	1994	DL	18	CP	68.00	2.0	34.00	0	1	0	0	0	0	0	1	10.0	10.0
170	1994	DL	19	CP	150.00	3.0	50.00	0	1	0	0	0	0	0	1	11.0	2.0
171	1994	DL	20	CP	87.00	2.0	43.50	0	1	0	0	0	0	0	1	3.0	2.0
172	1994	DL	21	CP	162.00	2.0	81.00	0	1	0	0	0	0	0	1	10.0	9.0
173	1994	DL	22	CP	163.00	4.0	40.75	0	1	0	0	0	0	0	1	8.0	4.0
174	1994	DL	23	CP	200.00	3.0	66.67	0	1	0	0	0	0	0	1	11.0	7.0
175	1994	DL	24	CP	271.25	6.0	45.21	0	1	0	0	0	0	0	1	10.0	7.0
176	1994	DL	25	CP	47.00	3.0	15.67	0	1	0	0	0	0	0	1	12.0	10.0
177	1994	DL	26	CP	190.00	2.0	95.00	0	1	0	0	0	0	0	1	12.0	7.0

Table 7.5-1. Camping and Day Use Visitor Expenditure Function Observations (continue).

Observation Number	Year	Site	Questionnaire Number	Visitor Type	Expenditures	Number of Days	Expenditures per Day	Upper Truckee River UTR	Donner Lake DL	Promer Reservoir PR	Stampede Reservoir SR	Boon Reservoir BR	Lower Truckee River LTR	Pyramid Lake PL	Camping Visitor	Activity Hours	Group Size
178	1994	DL	27	CP	121.25	2.0	60.63	0	1	0	0	0	0	0	1	7.0	14.0
179	1994	DL	28	CP	354.00	7.0	50.57	0	1	0	0	0	0	0	1	2.0	2.0
180	1994	DL	29	CP	51.00	2.5	20.40	0	1	0	0	0	0	0	1	9.0	6.0
181	1994	DL	30	CP	140.00	2.0	70.00	0	1	0	0	0	0	0	1	12.0	2.0
182	1994	DL	31	CP	144.25	2.0	72.13	0	1	0	0	0	0	0	1	12.0	1.0
183	1994	DL	32	CP	830.00	7.0	118.57	0	1	0	0	0	0	0	1	8.0	8.0
184	1994	DL	33	CP	64.75	2.0	32.38	0	1	0	0	0	0	0	1	12.0	4.0
185	1994	DL	34	CP	38.00	2.0	19.00	0	1	0	0	0	0	0	1	5.0	4.0
186	1994	DL	35	CP	25.00	2.0	12.50	0	1	0	0	0	0	0	1	7.0	6.0
187	1994	DL	36	CP	14.00	5.0	2.80	0	1	0	0	0	0	0	1	8.0	3.0
188	1994	DL	37	CP	30.00	3.0	10.00	0	1	0	0	0	0	0	1	1.0	2.0
189	1994	DL	38	CP	121.00	4.0	30.25	0	1	0	0	0	0	0	1	5.0	8.0
190	1994	DL	39	CP	73.00	3.0	24.33	0	1	0	0	0	0	0	1	6.0	6.0
191	1994	DL	40	CP	110.50	5.0	22.10	0	1	0	0	0	0	0	1	10.0	4.0
192	1994	DL	41	CP	140.00	3.0	46.67	0	1	0	0	0	0	0	1	7.0	7.0
193	1994	DL	42	CP	74.00	4.0	18.50	0	1	0	0	0	0	0	1	12.0	2.0
194	1994	DL	1	DU	25.00	0.0	25.00	0	1	0	0	0	0	0	0	3.0	2.0
195	1994	DL	2	DU	63.00	0.0	63.00	0	1	0	0	0	0	0	0	4.0	4.0
196	1994	DL	3	DU	19.00	0.0	19.00	0	1	0	0	0	0	0	0	4.0	3.0
197	1994	DL	4	DU	53.00	0.0	53.00	0	1	0	0	0	0	0	0	2.0	4.0
198	1994	DL	5	DU	34.00	0.0	34.00	0	1	0	0	0	0	0	0	5.0	6.0
199	1994	DL	6	DU	95.00	0.0	95.00	0	1	0	0	0	0	0	0	6.0	11.0
200	1994	DL	7	DU	27.00	0.0	27.00	0	1	0	0	0	0	0	0	3.0	10.0
201	1994	DL	8	DU	3.00	0.0	3.00	0	1	0	0	0	0	0	0	4.0	4.0
202	1994	DL	9	DU	5.00	0.0	5.00	0	1	0	0	0	0	0	0	6.0	3.0
203	1994	DL	10	DU	7.00	0.0	7.00	0	1	0	0	0	0	0	0	10.0	4.0
204	1994	DL	11	DU	60.50	0.0	60.50	0	1	0	0	0	0	0	0	9.0	7.0
205	1994	DL	12	DU	125.00	0.0	125.00	0	1	0	0	0	0	0	0	7.0	5.0
206	1994	DL	13	DU	22.50	0.0	22.50	0	1	0	0	0	0	0	0	3.0	6.0
207	1994	DL	14	DU	85.00	0.0	85.00	0	1	0	0	0	0	0	0	3.5	5.0
208	1994	DL	15	DU	43.00	0.0	43.00	0	1	0	0	0	0	0	0	4.0	4.0
209	1994	DL	16	DU	20.00	0.0	20.00	0	1	0	0	0	0	0	0	1.5	2.0
210	1994	DL	17	DU	140.00	0.0	140.00	0	1	0	0	0	0	0	0	6.0	9.0
211	1994	DL	18	DU	25.00	0.0	25.00	0	1	0	0	0	0	0	0	10.0	2.0
212	1994	DL	19	DU	35.00	0.0	35.00	0	1	0	0	0	0	0	0	5.0	2.0
213	1994	DL	20	DU	5.00	0.0	5.00	0	1	0	0	0	0	0	0	7.0	16.0
214	1994	DL	21	DU	60.00	0.0	60.00	0	1	0	0	0	0	0	0	8.0	7.0
215	1994	DL	22	DU	11.00	0.0	11.00	0	1	0	0	0	0	0	0	4.0	9.0
216	1994	DL	23	DU	31.00	0.0	31.00	0	1	0	0	0	0	0	0	3.0	6.0
217	1994	DL	24	DU	10.00	0.0	10.00	0	1	0	0	0	0	0	0	4.0	9.0
218	1994	DL	25	DU	81.45	0.0	81.45	0	1	0	0	0	0	0	0	2.5	4.0
219	1994	DL	26	DU	5.00	0.0	5.00	0	1	0	0	0	0	0	0	8.0	4.0
220	1994	DL	27	DU	177.99	0.0	177.99	0	1	0	0	0	0	0	0	8.0	8.0
221	1994	DL	28	DU	46.00	0.0	46.00	0	1	0	0	0	0	0	0	6.0	5.0
222	1994	DL	29	DU	149.51	0.0	149.51	0	1	0	0	0	0	0	0	3.0	5.0
223	1994	DL	30	DU	12.00	0.0	12.00	0	1	0	0	0	0	0	0	3.0	2.0
224	1994	DL	31	DU	156.06	0.0	156.06	0	1	0	0	0	0	0	0	4.0	8.0
225	1994	DL	32	DU	92.50	0.0	92.50	0	1	0	0	0	0	0	0	2.0	1.0
226	1994	DL	33	DU	21.00	0.0	21.00	0	1	0	0	0	0	0	0	6.0	4.0
227	1994	DL	34	DU	5.00	0.0	5.00	0	1	0	0	0	0	0	0	5.0	2.0
228	1994	DL	35	DU	50.00	0.0	50.00	0	1	0	0	0	0	0	0	5.0	3.0
229	1994	DL	36	DU	11.00	0.0	11.00	0	1	0	0	0	0	0	0	4.0	2.0
230	1994	DL	37	DU	15.00	0.0	15.00	0	1	0	0	0	0	0	0	8.0	2.0
231	1994	DL	38	DU	4.50	0.0	4.50	0	1	0	0	0	0	0	0	3.0	1.0
232	1994	DL	39	DU	137.00	0.0	137.00	0	1	0	0	0	0	0	0	2.0	4.0
233	1994	DL	40	DU	2.00	0.0	2.00	0	1	0	0	0	0	0	0	6.0	7.0
234	1994	DL	41	DU	5.00	0.0	5.00	0	1	0	0	0	0	0	0	2.0	2.0
235	1994	PR	1	CP	177.70	4.0	44.43	0	0	1	0	0	0	0	1	9.0	2.0
236	1994	PR	2	CP	10.00	3.0	3.33	0	0	1	0	0	0	0	1	2.0	2.0



Table 7.5-1. Camping and Day Use Visitor Expenditure Function Observations (continue).

Observation Number	Year	Site	Questionnaire Number	Visitor Type	Expenditures	Number of Days	Expenditures per Day	Upper Truckee River UTR	Donner Lake DL	Promer Reservoir PR	Starzede Reservoir SR	Boca Reservoir BR	Lower Truckee River LTR	Pyramid Lake PL	Camping Visitor	Activity Hours	Group Size
237	1994	PR	3	C	193.00	2.0	96.50	0	0	1	0	0	0	0	1	10.0	9.0
238	1994	PR	4	C	114.00	14.0	8.14	0	0	1	0	0	0	0	1	12.0	3.0
239	1994	PR	5	C	125.00	7.0	17.86	0	0	1	0	0	0	0	1	1.0	2.0
240	1994	PR	6	C	185.00	2.0	92.50	0	0	1	0	0	0	0	1	7.0	3.0
241	1994	PR	7	C	245.00	3.0	81.67	0	0	1	0	0	0	0	1	4.0	7.0
242	1994	PR	8	C	6.00	1.0	6.00	0	0	1	0	0	0	0	1	5.0	6.0
243	1994	PR	9	C	279.00	3.0	93.00	0	0	1	0	0	0	0	1	3.0	1.0
244	1994	PR	10	C	8.00	2.0	4.00	0	0	1	0	0	0	0	1	12.0	2.0
245	1994	PR	11	C	8.00	3.0	2.67	0	0	1	0	0	0	0	1	9.0	4.0
246	1994	PR	12	C	31.00	4.0	7.75	0	0	1	0	0	0	0	1	6.0	2.0
247	1994	PR	13	C	63.00	1.0	63.00	0	0	1	0	0	0	0	1	6.0	2.0
248	1994	PR	14	C	87.50	4.0	21.88	0	0	1	0	0	0	0	1	8.0	1.0
249	1994	PR	15	C	522.00	4.0	130.50	0	0	1	0	0	0	0	1	12.0	2.0
250	1994	PR	16	C	64.00	9.0	7.11	0	0	1	0	0	0	0	1	12.0	6.0
251	1994	PR	17	C	244.00	3.0	81.33	0	0	1	0	0	0	0	1	10.0	8.0
252	1994	PR	18	C	76.00	2.0	38.00	0	0	1	0	0	0	0	1	8.0	2.0
253	1994	PR	19	C	16.00	2.0	8.00	0	0	1	0	0	0	0	1	12.0	3.0
254	1994	PR	20	C	120.00	7.0	17.14	0	0	1	0	0	0	0	1	12.0	1.0
255	1994	PR	21	C	426.00	12.0	35.50	0	0	1	0	0	0	0	1	8.0	4.0
256	1994	PR	22	C	30.00	5.0	6.00	0	0	1	0	0	0	0	1	8.0	4.0
257	1994	PR	23	C	24.00	2.0	12.00	0	0	1	0	0	0	0	1	7.0	8.0
258	1994	PR	24	C	96.00	3.0	32.00	0	0	1	0	0	0	0	1	9.0	7.0
259	1994	PR	25	C	59.25	4.0	14.81	0	0	1	0	0	0	0	1	5.0	5.0
260	1994	PR	26	C	24.00	2.0	12.00	0	0	1	0	0	0	0	1	2.0	4.0
261	1994	PR	27	C	136.00	2.0	68.00	0	0	1	0	0	0	0	1	5.0	2.0
262	1994	PR	28	C	16.00	2.0	8.00	0	0	1	0	0	0	0	1	10.0	5.0
263	1994	PR	29	C	74.00	3.0	24.67	0	0	1	0	0	0	0	1	10.0	2.0
264	1994	PR	30	C	66.00	2.0	33.00	0	0	1	0	0	0	0	1	6.0	3.0
265	1994	PR	1	D	1.00	0.0	1.00	0	0	1	0	0	0	0	0	4.0	1.0
266	1994	PR	2	D	80.00	0.0	80.00	0	0	1	0	0	0	0	0	3.0	4.0
267	1994	SR	1	C	11.00	2.0	5.50	0	0	0	1	0	0	0	1	11.0	2.0
268	1994	SR	2	C	232.00	3.0	77.33	0	0	0	1	0	0	0	1	8.5	2.0
269	1994	SR	3	C	11.00	1.0	11.00	0	0	0	1	0	0	0	1	8.0	2.0
270	1994	SR	4	C	72.00	4.0	18.00	0	0	0	1	0	0	0	1	9.0	2.0
271	1994	SR	5	C	22.88	2.0	11.44	0	0	0	1	0	0	0	1	6.0	2.0
272	1994	SR	6	C	300.00	3.0	100.00	0	0	0	1	0	0	0	1	10.0	4.0
273	1994	SR	7	C	242.00	2.0	121.00	0	0	0	1	0	0	0	1	8.0	5.0
274	1994	SR	8	C	237.00	7.0	33.86	0	0	0	1	0	0	0	1	8.0	2.0
275	1994	SR	9	C	11.00	1.0	11.00	0	0	0	1	0	0	0	1	10.0	3.0
276	1994	SR	10	C	16.00	4.0	4.00	0	0	0	1	0	0	0	1	4.0	6.0
277	1994	SR	11	C	227.00	14.0	16.21	0	0	0	1	0	0	0	1	5.0	2.0
278	1994	SR	12	C	135.00	4.0	33.75	0	0	0	1	0	0	0	1	4.0	4.0
279	1994	SR	13	C	40.00	4.0	10.00	0	0	0	1	0	0	0	1	10.0	6.0
280	1994	SR	14	C	43.00	6.0	7.17	0	0	0	1	0	0	0	1	7.0	4.0
281	1994	SR	15	C	16.50	3.0	5.50	0	0	0	1	0	0	0	1	7.0	3.0
282	1994	SR	16	C	95.00	5.0	19.00	0	0	0	1	0	0	0	1	5.0	2.0
283	1994	SR	17	C	132.00	2.0	66.00	0	0	0	1	0	0	0	1	12.0	8.0
284	1994	SR	18	C	142.50	8.0	17.81	0	0	0	1	0	0	0	1	8.0	3.0
285	1994	SR	19	C	3108.00	14.0	222.00	0	0	0	1	0	0	0	1	4.0	4.0
286	1994	SR	20	C	165.00	5.0	33.00	0	0	0	1	0	0	0	1	8.0	16.0
287	1994	SR	21	C	170.00	3.0	56.67	0	0	0	1	0	0	0	1	12.0	4.0
288	1994	SR	22	C	44.00	5.0	8.80	0	0	0	1	0	0	0	1	7.0	2.0
289	1994	SR	23	C	322.00	14.0	23.00	0	0	0	1	0	0	0	1	8.0	2.0
290	1994	SR	24	C	48.00	3.0	16.00	0	0	0	1	0	0	0	1	9.0	4.0
291	1994	SR	25	C	149.00	4.0	37.25	0	0	0	1	0	0	0	1	9.0	2.0
292	1994	SR	26	C	142.00	2.0	71.00	0	0	0	1	0	0	0	1	11.0	3.0
293	1994	SR	27	C	190.00	3.0	63.33	0	0	0	1	0	0	0	1	10.0	4.0
294	1994	SR	28	C	132.00	3.0	44.00	0	0	0	1	0	0	0	1	12.0	8.0
295	1994	SR	29	C	92.00	2.0	46.00	0	0	0	1	0	0	0	1	7.0	2.0

Table 7.5-1. Camping and Day Use Visitor Expenditure Function Observations (continue).

Observation Number	Year	Site	Questionnaire Number	Visitor Type	Expenditures	Number of Days	Expenditures per Day	Upper Truckee River UTR	Donner Lake DL	Promer Reservoir PR	Stampede Reservoir SR	Boos Reservoir BR	Lower Truckee River LTR	Pyramid Lake PL	Camping Visitor	Activity Hours	Group Size
296	1994	SR	30	CP	163.00	4.0	40.75	0	0	0	1	0	0	0	1	7.0	6.0
297	1994	SR	31	CP	78.08	6.0	13.00	0	0	0	1	0	0	0	1	8.0	2.0
298	1994	SR	32	CP	106.50	4.0	26.63	0	0	0	1	0	0	0	1	10.0	4.0
299	1994	SR	33	CP	30.00	2.0	15.00	0	0	0	1	0	0	0	1	8.0	5.0
300	1994	SR	34	CP	22.00	4.0	5.50	0	0	0	1	0	0	0	1	8.0	2.0
301	1994	SR	35	CP	68.00	2.0	34.00	0	0	0	1	0	0	0	1	11.0	4.0
302	1994	SR	36	CP	153.00	4.0	38.25	0	0	0	1	0	0	0	1	12.0	20.0
303	1994	SR	37	CP	11.00	1.0	11.00	0	0	0	1	0	0	0	1	2.0	2.0
304	1994	SR	38	CP	19.00	2.0	9.50	0	0	0	1	0	0	0	1	8.0	3.0
305	1994	SR	39	CP	481.00	20.0	24.05	0	0	0	1	0	0	0	1	7.0	5.0
306	1994	SR	40	CP	330.00	4.0	82.50	0	0	0	1	0	0	0	1	12.0	9.0
307	1994	SR	41	CP	206.00	2.0	103.00	0	0	0	1	0	0	0	1	12.0	6.0
308	1994	SR	42	CP	72.00	2.0	36.00	0	0	0	1	0	0	0	1	12.0	7.0
309	1994	SR	43	CP	163.00	8.0	20.38	0	0	0	1	0	0	0	1	5.0	2.0
310	1994	SR	44	CP	253.00	3.0	84.33	0	0	0	1	0	0	0	1	8.0	4.0
311	1994	SR	45	CP	183.00	3.0	61.00	0	0	0	1	0	0	0	1	12.0	2.0
312	1994	SR	46	CP	57.00	3.0	19.00	0	0	0	1	0	0	0	1	7.0	2.0
313	1994	SR	47	CP	78.50	7.0	11.21	0	0	0	1	0	0	0	1	6.0	2.0
314	1994	SR	48	CP	33.00	4.0	8.25	0	0	0	1	0	0	0	1	7.0	9.0
315	1994	SR	49	CP	103.00	3.0	34.33	0	0	0	1	0	0	0	1	12.0	4.0
316	1994	SR	50	CP	267.50	4.0	66.88	0	0	0	1	0	0	0	1	8.0	4.0
317	1994	SR	51	CP	180.00	6.0	30.00	0	0	0	1	0	0	0	1	8.0	11.0
318	1994	SR	52	CP	47.00	2.0	23.50	0	0	0	1	0	0	0	1	5.0	2.0
319	1994	SR	53	CP	88.00	3.0	29.33	0	0	0	1	0	0	0	1	11.0	4.0
320	1994	SR	54	CP	242.00	8.0	30.25	0	0	0	1	0	0	0	1	12.0	2.0
321	1994	SR	55	CP	114.00	2.0	57.00	0	0	0	1	0	0	0	1	10.0	2.0
322	1994	SR	56	CP	483.00	10.0	48.30	0	0	0	1	0	0	0	1	11.0	2.0
323	1994	SR	57	CP	64.00	2.0	32.00	0	0	0	1	0	0	0	1	12.0	4.0
324	1994	SR	58	CP	226.50	4.0	56.63	0	0	0	1	0	0	0	1	12.0	22.0
325	1994	SR	59	CP	134.00	3.0	44.67	0	0	0	1	0	0	0	1	12.0	4.0
326	1994	SR	60	CP	142.50	4.0	35.63	0	0	0	1	0	0	0	1	12.0	5.0
327	1994	SR	61	CP	440.00	3.0	146.67	0	0	0	1	0	0	0	1	12.0	25.0
328	1994	SR	62	CP	343.50	7.0	49.07	0	0	0	1	0	0	0	1	7.0	2.0
329	1994	SR	63	CP	3.50	2.0	1.75	0	0	0	1	0	0	0	1	4.0	10.0
330	1994	SR	64	CP	98.00	3.0	32.67	0	0	0	1	0	0	0	1	8.0	5.0
331	1994	SR	1	CP	960.00	7.0	137.14	0	0	0	0	1	0	0	1	12.0	10.0
332	1994	SR	2	CP	250.00	1.0	250.00	0	0	0	0	1	0	0	1	12.0	2.0
333	1994	SR	3	CP	237.00	2.0	118.50	0	0	0	0	1	0	0	1	10.0	6.0
334	1994	SR	4	CP	6.00	2.0	3.00	0	0	0	0	1	0	0	1	11.0	3.0
335	1994	SR	5	CP	89.00	3.0	29.67	0	0	0	0	1	0	0	1	5.5	3.0
336	1994	SR	6	CP	66.00	2.0	33.00	0	0	0	0	1	0	0	1	7.0	3.0
337	1994	SR	7	CP	66.00	1.0	66.00	0	0	0	0	1	0	0	1	4.0	20.0
338	1994	SR	8	CP	12.00	2.0	6.00	0	0	0	0	1	0	0	1	9.0	4.0
339	1994	SR	9	CP	86.00	2.0	43.00	0	0	0	0	1	0	0	1	12.0	3.0
340	1994	SR	10	CP	58.00	3.0	19.33	0	0	0	0	1	0	0	1	5.0	1.0
341	1994	SR	11	CP	122.00	1.0	122.00	0	0	0	0	1	0	0	1	8.0	4.0
342	1994	SR	12	CP	206.00	14.0	14.71	0	0	0	0	1	0	0	1	8.0	9.0
343	1994	SR	13	CP	52.00	1.0	52.00	0	0	0	0	1	0	0	1	4.0	2.0
344	1994	SR	14	CP	207.00	14.0	14.79	0	0	0	0	1	0	0	1	1.0	3.0
345	1994	SR	15	CP	458.00	2.0	229.00	0	0	0	0	1	0	0	1	12.0	2.0
346	1994	SR	16	CP	353.00	2.0	176.50	0	0	0	0	1	0	0	1	12.0	14.0
347	1994	SR	17	CP	12.00	3.0	4.00	0	0	0	0	1	0	0	1	10.0	4.0
348	1994	SR	1	DU	10.00	0.0	10.00	0	0	0	0	1	0	0	0	3.0	3.0
349	1994	SR	2	DU	15.00	0.0	15.00	0	0	0	0	1	0	0	0	5.0	2.0
350	1994	SR	3	DU	100.00	0.0	100.00	0	0	0	0	1	0	0	0	8.0	25.0
351	1994	SR	4	DU	100.00	0.0	100.00	0	0	0	0	1	0	0	0	8.0	6.0
352	1994	SR	5	DU	20.00	0.0	20.00	0	0	0	0	1	0	0	0	4.0	2.0
353	1994	SR	6	DU	50.00	0.0	50.00	0	0	0	0	1	0	0	0	4.0	9.0
354	1994	SR	7	DU	60.00	0.0	60.00	0	0	0	0	1	0	0	0	4.0	3.0

Table 7.5-1. Camping and Day Use Visitor Expenditure Function Observations (continue).

Observation Number	Year	Site	Questionnaire Number	Visitor Type	Expenditures	Number of Days	Expenditures per Day	Upper Truckee River UTR	Donner Lake DL	Promer Reservoir PR	Stampede Reservoir SR	Boon Reservoir BR	Lower Truckee River LTR	Pyramid Lake PL	Camping Visitor	Activity Hours	Group Size
355	1994	BR	8	DU	20.00	0.0	20.00	0	0	0	0	1	0	0	0	4.0	5.0
356	1994	BR	9	DU	25.00	0.0	25.00	0	0	0	0	1	0	0	0	5.0	5.0
357	1994	BR	10	DU	22.00	0.0	22.00	0	0	0	0	1	0	0	0	12.0	2.0
358	1994	BR	11	DU	70.00	0.0	70.00	0	0	0	0	1	0	0	0	10.0	1.0
359	1994	BR	12	DU	95.00	0.0	95.00	0	0	0	0	1	0	0	0	6.0	13.0
360	1994	BR	13	DU	8.00	0.0	8.00	0	0	0	0	1	0	0	0	4.0	2.0
361	1994	BR	14	DU	45.00	0.0	45.00	0	0	0	0	1	0	0	0	3.0	6.0
362	1994	PL	1	CP	120.00	3.0	40.00	0	0	0	0	0	0	1	1	11.9	2.0
363	1994	PL	2	CP	500.00	4.0	125.00	0	0	0	0	0	0	1	1	12.0	9.0
364	1994	PL	3	CP	10.00	3.0	3.33	0	0	0	0	0	0	1	1	10.0	15.0
365	1994	PL	4	CP	150.00	2.0	75.00	0	0	0	0	0	0	1	1	9.0	4.0
366	1994	PL	5	CP	83.75	2.0	41.88	0	0	0	0	0	0	1	1	7.0	8.0
367	1994	PL	6	CP	86.00	2.0	43.00	0	0	0	0	0	0	1	1	9.0	3.0
368	1994	PL	7	CP	125.00	2.0	62.50	0	0	0	0	0	0	1	1	5.0	4.0
369	1994	PL	8	CP	56.00	3.0	18.67	0	0	0	0	0	0	1	1	7.0	2.0
370	1994	PL	9	CP	15.00	3.0	5.00	0	0	0	0	0	0	1	1	6.0	4.0
371	1994	PL	10	CP	130.00	3.0	43.33	0	0	0	0	0	0	1	1	12.0	5.0
372	1994	PL	11	CP	100.00	2.0	50.00	0	0	0	0	0	0	1	1	12.0	14.0
373	1994	PL	12	CP	105.00	2.0	52.50	0	0	0	0	0	0	1	1	12.0	4.0
374	1994	PL	13	CP	150.00	2.0	75.00	0	0	0	0	0	0	1	1	2.0	4.0
375	1994	PL	14	CP	445.00	4.0	111.25	0	0	0	0	0	0	1	1	12.0	5.0
376	1994	PL	15	CP	314.00	2.0	157.00	0	0	0	0	0	0	1	1	11.0	6.0
377	1994	PL	16	CP	253.00	3.0	84.33	0	0	0	0	0	0	1	1	12.0	4.0
378	1994	PL	17	CP	155.00	10.0	15.50	0	0	0	0	0	0	1	1	6.0	3.0
379	1994	PL	18	CP	300.00	4.0	75.00	0	0	0	0	0	0	1	1	11.0	5.0
380	1994	PL	19	CP	152.00	2.0	76.00	0	0	0	0	0	0	1	1	12.0	4.0
381	1994	PL	1	DU	20.00	0.0	20.00	0	0	0	0	0	0	1	0	4.0	6.0
382	1994	PL	2	DU	240.00	0.0	240.00	0	0	0	0	0	0	1	0	7.0	26.0
383	1994	PL	3	DU	50.00	0.0	50.00	0	0	0	0	0	0	1	0	5.0	3.0
384	1994	PL	4	DU	6.00	0.0	6.00	0	0	0	0	0	0	1	0	6.0	4.0
385	1994	PL	5	DU	65.00	0.0	65.00	0	0	0	0	0	0	1	0	6.0	9.0
386	1994	PL	6	DU	72.00	0.0	72.00	0	0	0	0	0	0	1	0	4.0	3.0
387	1994	PL	7	DU	60.00	0.0	60.00	0	0	0	0	0	0	1	0	8.0	2.0
388	1994	PL	8	DU	36.00	0.0	36.00	0	0	0	0	0	0	1	0	2.0	4.0
389	1994	PL	9	DU	70.00	0.0	70.00	0	0	0	0	0	0	1	0	5.0	5.0
390	1994	PL	10	DU	116.00	0.0	116.00	0	0	0	0	0	0	1	0	2.0	5.0
391	1994	PL	11	DU	45.00	0.0	45.00	0	0	0	0	0	0	1	0	8.0	4.0
392	1994	PL	12	DU	70.00	0.0	70.00	0	0	0	0	0	0	1	0	8.0	2.0
393	1994	PL	13	DU	41.00	0.0	41.00	0	0	0	0	0	0	1	0	8.0	2.0
394	1994	PL	14	DU	25.00	0.0	25.00	0	0	0	0	0	0	1	0	9.0	3.0
395	1994	PL	15	DU	40.00	0.0	40.00	0	0	0	0	0	0	1	0	7.0	4.0
396	1994	PL	16	DU	25.00	0.0	25.00	0	0	0	0	0	0	1	0	2.0	3.0
397	1994	PL	17	DU	50.00	0.0	50.00	0	0	0	0	0	0	1	0	6.0	4.0
398	1994	PL	18	DU	20.00	0.0	20.00	0	0	0	0	0	0	1	0	2.0	2.0
399	1994	PL	19	DU	75.00	0.0	75.00	0	0	0	0	0	0	1	0	7.0	5.0
400	1994	PL	20	DU	15.00	0.0	15.00	0	0	0	0	0	0	1	0	10.0	4.0
401	1994	PL	21	DU	51.00	0.0	51.00	0	0	0	0	0	0	1	0	6.0	4.0
402	1994	PL	22	DU	121.00	0.0	121.00	0	0	0	0	0	0	1	0	6.0	13.0
403	1994	PL	23	DU	76.00	0.0	76.00	0	0	0	0	0	0	1	0	6.0	14.0
404	1994	PL	24	DU	35.00	0.0	35.00	0	0	0	0	0	0	1	0	2.0	3.0
405	1994	PL	25	DU	95.00	0.0	95.00	0	0	0	0	0	0	1	0	8.0	15.0
406	1994	PL	26	DU	25.00	0.0	25.00	0	0	0	0	0	0	1	0	5.0	3.0
407	1994	PL	27	DU	12.00	0.0	12.00	0	0	0	0	0	0	1	0	7.0	6.0
408	1994	PL	28	DU	55.00	0.0	55.00	0	0	0	0	0	0	1	0	6.0	4.0
409	1994	PL	29	DU	36.00	0.0	36.00	0	0	0	0	0	0	1	0	8.0	15.0
410	1994	PL	30	DU	36.00	0.0	36.00	0	0	0	0	0	0	1	0	6.0	4.0
411	1994	PL	31	DU	25.00	0.0	25.00	0	0	0	0	0	0	1	0	6.0	6.0
412	1994	PL	32	DU	15.00	0.0	15.00	0	0	0	0	0	0	1	0	5.0	2.0
413	1994	PL	33	DU	90.00	0.0	90.00	0	0	0	0	0	0	1	0	6.0	6.0

Table 7.5-1. Camping and Day Use Visitor Expenditure Function Observations (continue).

Observation Number	Year	Site	Questionnaire Number	Visitor Type	Expenditures	Number of Days	Expenditures per Day	Upper Truckee River UTR	Donner Lake DL	Prosser Reservoir PR	Stampede Reservoir SR	Boon Reservoir BR	Lower Truckee River LTR	Pyramid Lake PL	Camping Visitor	Activity Hours	Group Size
414	1994	PL	34	DU	67.00	0.0	67.00	0	0	0	0	0	0	1	0	3.0	8.0
415	1994	PL	35	DU	19.00	0.0	19.00	0	0	0	0	0	0	1	0	5.0	2.0
416	1994	PL	36	DU	55.00	0.0	55.00	0	0	0	0	0	0	1	0	10.0	6.0
417	1994	PL	37	DU	130.00	0.0	130.00	0	0	0	0	0	0	1	0	3.0	5.0
418	1994	PL	38	DU	31.00	0.0	31.00	0	0	0	0	0	0	1	0	5.0	5.0
419	1994	PL	39	DU	35.00	0.0	35.00	0	0	0	0	0	0	1	0	4.0	5.0
420	1994	PL	40	DU	65.00	0.0	65.00	0	0	0	0	0	0	1	0	8.0	10.0
421	1994	PL	41	DU	195.00	0.0	195.00	0	0	0	0	0	0	1	0	8.0	13.0
422	1994	PL	42	DU	70.00	0.0	70.00	0	0	0	0	0	0	1	0	5.0	6.0
423	1994	PL	43	DU	25.00	0.0	25.00	0	0	0	0	0	0	1	0	2.0	2.0
424	1994	PL	44	DU	35.00	0.0	35.00	0	0	0	0	0	0	1	0	5.0	11.0
425	1994	PL	45	DU	57.00	0.0	57.00	0	0	0	0	0	0	1	0	6.0	7.0
426	1994	PL	46	DU	50.00	0.0	50.00	0	0	0	0	0	0	1	0	12.0	2.0
427	1994	PL	47	DU	7.00	0.0	7.00	0	0	0	0	0	0	1	0	3.5	5.0
428	1994	PL	48	DU	190.00	0.0	190.00	0	0	0	0	0	0	1	0	5.0	15.0
429	1994	PL	49	DU	17.00	0.0	17.00	0	0	0	0	0	0	1	0	4.0	3.0
430	1994	PL	50	DU	30.00	0.0	30.00	0	0	0	0	0	0	1	0	5.0	2.0
431	1994	PL	51	DU	28.00	0.0	28.00	0	0	0	0	0	0	1	0	5.0	2.0
432	1994	PL	52	DU	36.00	0.0	36.00	0	0	0	0	0	0	1	0	10.0	10.0
433	1995	DL	1	SHO-DU	10.59	0.0	10.59	0	1	0	0	0	0	0	0	4.0	10.0
434	1995	DL	2	SHO-DU	73.33	0.0	73.33	0	1	0	0	0	0	0	0	2.0	4.0
435	1995	DL	3	SHO-DU	40.43	0.0	40.43	0	1	0	0	0	0	0	0	6.0	2.0
436	1995	DL	4	SHO-DU	137.50	0.0	137.50	0	1	0	0	0	0	0	0	12.0	4.0
437	1995	DL	5	SHO-DU	44.29	0.0	44.29	0	1	0	0	0	0	0	0	1.0	3.0
438	1995	DL	6	SHO-DU	90.94	0.0	90.94	0	1	0	0	0	0	0	0	4.0	3.0
439	1995	DL	7	SHO-DU	115.00	0.0	115.00	0	1	0	0	0	0	0	0	5.0	4.0
440	1995	DL	8	SHO-DU	105.00	0.0	105.00	0	1	0	0	0	0	0	0	6.0	4.0
441	1995	DL	9	SHO-DU	164.44	0.0	164.44	0	1	0	0	0	0	0	0	12.0	4.0
442	1995	DL	10	SHO-DU	42.86	0.0	42.86	0	1	0	0	0	0	0	0	6.0	12.0
443	1995	DL	11	SHO-DU	137.14	0.0	137.14	0	1	0	0	0	0	0	0	9.0	4.0
444	1995	DL	12	SHO-DU	76.67	0.0	76.67	0	1	0	0	0	0	0	0	1.0	3.0
445	1995	DL	13	SHO-DU	85.00	0.0	85.00	0	1	0	0	0	0	0	0	6.0	10.0
446	1995	DL	14	SHO-DU	262.50	0.0	262.50	0	1	0	0	0	0	0	0	7.0	4.0
447	1995	DL	15	SHO-DU	40.59	0.0	40.59	0	1	0	0	0	0	0	0	4.0	4.0
448	1995	DL	16	SHO-DU	116.84	0.0	116.84	0	1	0	0	0	0	0	0	9.0	5.0
449	1995	DL	17	SHO-DU	70.00	0.0	70.00	0	1	0	0	0	0	0	0	12.0	4.0
450	1995	DL	18	SHO-DU	96.00	0.0	96.00	0	1	0	0	0	0	0	0	4.0	8.0
451	1995	DL	19	SHO-DU	125.00	0.0	125.00	0	1	0	0	0	0	0	0	7.0	2.0
452	1995	DL	20	SHO-DU	24.67	0.0	24.67	0	1	0	0	0	0	0	0	3.0	6.0
453	1995	DL	21	SHO-DU	67.50	0.0	67.50	0	1	0	0	0	0	0	0	5.0	4.0
454	1995	DL	22	SHO-DU	106.67	0.0	106.67	0	1	0	0	0	0	0	0	6.0	5.5
455	1995	DL	23	SHO-DU	153.33	0.0	153.33	0	1	0	0	0	0	0	0	7.0	4.0
456	1995	DL	24	SHO-DU	53.08	0.0	53.08	0	1	0	0	0	0	0	0	12.0	9.0
457	1995	DL	1	VHR-DU	423.33	0.0	423.33	0	1	0	0	0	0	0	0	6.0	4.0
458	1995	DL	2	VHR-DU	141.25	0.0	141.25	0	1	0	0	0	0	0	0	7.0	4.0
459	1995	DL	3	VHR-DU	359.37	0.0	359.37	0	1	0	0	0	0	0	0	12.0	5.0
460	1995	DL	4	VHR-DU	296.43	0.0	296.43	0	1	0	0	0	0	0	0	8.0	7.0
461	1995	DL	5	VHR-DU	375.00	0.0	375.00	0	1	0	0	0	0	0	0	5.0	6.0
462	1995	DL	6	VHR-DU	178.57	0.0	178.57	0	1	0	0	0	0	0	0	12.0	4.0

**Table 7.5-2. Camping and Day Use Visitor Expenditure Function Values.**

	Upper Truckee River	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boca Reservoir	Lower Truckee River	Pyramid Lake
Camping Visitor Group Expenditures per Day	\$53.63	\$36.97	\$27.90	\$39.61	\$34.40	\$16.55	\$36.32
Day Use Visitor Group Expenditures per Day	\$84.55	\$52.00	\$34.07	\$52.78	\$48.85	\$28.89	\$56.38

## **7.6. Formulation of the Model Equations**

Model formulation incorporates the above descriptive statistics and expenditure function values. The variable that drives the model is the end of the month reservoir storage levels at Donner Lake and Prosser, Stampede, and Boca Reservoirs. Relative to the storage levels at Donner Lake and Prosser, Stampede, and Boca Reservoirs the model calculates the annual number of camping and day use visitors and the annual expenditures of the camping and day use visitors.

There are eleven functions within the model. Using only end of the month reservoir storage levels as the input into the model, the functions then generate the following data.

- Visitation Relative to End of the Month Reservoir Storage Levels
- Annual Visitation Relative to End of the Month Reservoir Storage Levels
- Annual Number of Camping Visitors
- Annual Number of Day Use Visitors
- Annual Number of Camping Visitor Groups
- Annual Number of Day Use Visitor Groups
- Annual Camping Visitor Expenditures
- Annual Day Use Visitor Expenditures
- Annual Number of Camping and Day Use Visitors
- Annual Camping and Day Use Visitor Expenditures
- Annual Camping and Day Use Visitor Expenditures by Category

Each of the functions calculate data either by use of a single equation or multiple equations. Simultaneously, data is generated by one function and inputted into another function and so on. Throughout the model, there are twenty-seven equations with thirty-eight variables.

### Visitation Relative to End of the Month Reservoir Storage Levels

The visitation relative to end of the month reservoir storage levels is derived by assigning a scale value to the end of the month reservoir storage level and then calculating a percentage of visitation corresponding to the assigned scale value. Each of these functions are based on data taken from the survey.

The scale values for reservoir storage levels are shown in Table 7.6-1. Scale values for Donner Lake range from high to low or 5 to 1. These scale values correspond to reservoir storage levels at Donner Lake from 9,660 acre-feet to 5,796 acre-feet. Scale values for Prosser, Stampede, and Boca Reservoirs range from high to low or 11 to 1. These scale values correspond to reservoir storage levels at Prosser Reservoir from 29,840 acre-feet to 0 acre-feet, at Stampede Reservoir from 226,500 acre-feet to 0 acre-feet, and at Boca Reservoir from 40,870 acre-feet to 0 acre-feet. These reservoir storage levels are stated in the survey questionnaire.

The end of the month reservoir storage level is assigned a scale value through the following equation.

$$\text{If } A_i \geq B_{it} \geq C_i \text{ storage level, then scale value } D_{it} = \alpha_i + \beta_i (B_{it}) \quad (7.6-1)$$

where:

$A_i$	is the high storage level for reservoir i
$B_{it}$	is the end of the month storage level for reservoir i in month t
$C_i$	is the low storage level for reservoir i
$D_{it}$	is the scale value for the end of the month storage level for reservoir i in month t
$\alpha_i$	is the scale value constant term for reservoir i
$\beta_i$	is the scale value slope coefficient term for reservoir i

This equation is formulated to linearly interpolate an end of the month storage level for a reservoir during any month to a scale value.

Separate equations for reservoir storage levels are formulated for Donner Lake and Prosser, Stampede, and Boca Reservoirs. These equations are provided below by reservoir.

#### Donner Lake

If  $9,660 \geq B_{it} \geq 5,796$  storage level, then scale value  $D_{it} = -5.000000 + .001035 (B_{it})$

If  $5,796 > B_{it} \geq 0$  storage level, then scale value  $D_{it} = 1.000000$

#### Prosser Reservoir

If  $29,840 \geq B_{it} \geq 0$  storage level, then scale value  $D_{it} = 1.000000 + .000335 (B_{it})$

#### Stampede Reservoir

If  $226,500 \geq B_{it} \geq 0$  storage level, then scale value  $D_{it} = 1.000000 + .000044 (B_{it})$

#### Boca Reservoir

If  $40,870 \geq B_{it} \geq 0$  storage level, then scale value  $D_{it} = 1.000000 + .000245 (B_{it})$

End of the month reservoir storage levels at Donner Lake and Prosser, Stampede, and Boca Reservoirs for April through October and Other Months are given in Table 7.6-2. April through October is considered to be the recreation season in a given year. Other Months are January, February, March, November, and December of the given year. The reservoir storage levels are taken in total for April through October and as an average for the Other Months. The scale values for these end of the month reservoir storage levels are calculated using the above equations and shown by reservoir in Table 7.6-3.

The percentage of visitation corresponding to the scale value of an end of the month reservoir storage level is based on the indicated number of visits per respondent for reservoir storage levels taken from the survey.

The indicated number of visits per respondent for reservoir storage levels are provided in Table 7.6-4. Also provided for reservoir storage levels are percentages of visitation.

Given that the percentage of visitation for reservoir storage level 1 is 100% at Donner Lake and Prosser, Stampede, and Boca Reservoirs. The visitation declines from 100% for reservoir storage level 1 to 82.64% for reservoir storage level 5 at Donner Lake, to 8.25% for reservoir storage level 11 at Prosser Reservoir, to 15.58% for reservoir storage level 11 at Stampede Reservoir, and to 4.68% for reservoir storage level 11 at Boca Reservoir.



The percentage of visitation corresponding to the scale value is then calculated through the following equation.

$$\text{If } E_i \geq D_{it} > F_i \text{ scale value, then visitation } G_{it} = \alpha_i + \beta_i (D_{it}) \quad (7.6-2)$$

where:

- $E_i$  is the high scale value for reservoir i
- $D_{it}$  is the scale value for the end of the month storage level for reservoir i in month t
- $F_i$  is the low scale value for reservoir i
- $G_{it}$  is the percentage of visitation corresponding to the scale value for the end of the month storage level for reservoir i in month t
- $\alpha_i$  is the percentage of visitation constant term for reservoir i
- $\beta_i$  is the percentage of visitation slope coefficient term for reservoir i

This equation is formulated to linearly interpolate a scale value for an end of the month storage level for a reservoir during any month to a percentage of visitation.

Separate equations for scale value and reservoir storage levels are formulated for Donner Lake and Prosser, Stampede, and Boca Reservoirs. These equations are provided below by reservoir.

#### Donner Lake

If  $5 \geq D_{it} > 4$  scale value, then visitation  $G_{it} = .935691 + .012862 (D_{it})$

If  $4 \geq D_{it} > 3$  scale value, then visitation  $G_{it} = .819936 + .041801 (D_{it})$

If  $3 \geq D_{it} > 2$  scale value, then visitation  $G_{it} = .733119 + .070740 (D_{it})$

If  $2 \geq D_{it} > 1$  scale value, then visitation  $G_{it} = .778135 + .048232 (D_{it})$

If  $1 = D_{it}$  scale value, then visitation  $G_{it} = .826367$

### Prosser Reservoir

If  $11 \geq D_{it} > 10$  scale value, then visitation  $G_{it} = 1.000000 + .000000 (D_{it})$

If  $10 \geq D_{it} > 9$  scale value, then visitation  $G_{it} = .702970 + .029703 (D_{it})$

If  $9 \geq D_{it} > 8$  scale value, then visitation  $G_{it} = .495050 + .052805 (D_{it})$

If  $8 \geq D_{it} > 7$  scale value, then visitation  $G_{it} = .415842 + .062706 (D_{it})$

If  $7 \geq D_{it} > 6$  scale value, then visitation  $G_{it} = .646865 + .029703 (D_{it})$

If  $6 \geq D_{it} > 5$  scale value, then visitation  $G_{it} = .151815 + .112211 (D_{it})$

If  $5 \geq D_{it} > 4$  scale value, then visitation  $G_{it} = .547855 + .033003 (D_{it})$

If  $4 \geq D_{it} > 3$  scale value, then visitation  $G_{it} = -1.419142 + .524752 (D_{it})$

If  $3 \geq D_{it} > 2$  scale value, then visitation  $G_{it} = -.062706 + .072607 (D_{it})$

If  $2 \geq D_{it} > 1$  scale value, then visitation  $G_{it} = .082508 + .000000 (D_{it})$

If  $1 = D_{it}$  scale value, then visitation  $G_{it} = .082508$

### Stampede Reservoir

If  $11 \geq D_{it} > 10$  scale value, then visitation  $G_{it} = .785714 + .019481 (D_{it})$

If  $10 \geq D_{it} > 9$  scale value, then visitation  $G_{it} = .720779 + .025974 (D_{it})$

If  $9 \geq D_{it} > 8$  scale value, then visitation  $G_{it} = .457792 + .055195 (D_{it})$

If  $8 \geq D_{it} > 7$  scale value, then visitation  $G_{it} = .483766 + .051948 (D_{it})$

If  $7 \geq D_{it} > 6$  scale value, then visitation  $G_{it} = .529221 + .045455 (D_{it})$

If  $6 \geq D_{it} > 5$  scale value, then visitation  $G_{it} = -.347403 + .191558 (D_{it})$

If  $5 \geq D_{it} > 4$  scale value, then visitation  $G_{it} = .545455 + .012987 (D_{it})$

If  $4 \geq D_{it} > 3$  scale value, then visitation  $G_{it} = -.974026 + .392857 (D_{it})$

If  $3 \geq D_{it} > 2$  scale value, then visitation  $G_{it} = .126623 + .025974 (D_{it})$

If  $2 \geq D_{it} > 1$  scale value, then visitation  $G_{it} = .133117 + .022727 (D_{it})$

If  $1 = D_{it}$  scale value, then visitation  $G_{it} = .155844$

## Boca Reservoir

If  $11 \geq D_{it} > 10$  scale value, then visitation  $G_{it} = 1.000000 + .000000 (D_{it})$

If  $10 \geq D_{it} > 9$  scale value, then visitation  $G_{it} = .117117 + .088288 (D_{it})$

If  $9 \geq D_{it} > 8$  scale value, then visitation  $G_{it} = .295495 + .068468 (D_{it})$

If  $8 \geq D_{it} > 7$  scale value, then visitation  $G_{it} = -.093694 + .117117 (D_{it})$

If  $7 \geq D_{it} > 6$  scale value, then visitation  $G_{it} = .284685 + .063063 (D_{it})$

If  $6 \geq D_{it} > 5$  scale value, then visitation  $G_{it} = -.180180 + .140541 (D_{it})$

If  $5 \geq D_{it} > 4$  scale value, then visitation  $G_{it} = .441441 + .016216 (D_{it})$

If  $4 \geq D_{it} > 3$  scale value, then visitation  $G_{it} = -.192793 + .174775 (D_{it})$

If  $3 \geq D_{it} > 2$  scale value, then visitation  $G_{it} = .034234 + .099099 (D_{it})$

If  $2 \geq D_{it} > 1$  scale value, then visitation  $G_{it} = -.138739 + .185586 (D_{it})$

If  $1 = D_{it}$  scale value, then visitation  $G_{it} = .046847$

Visitation relative to end of the month reservoir storage levels for Donner Lake and Prosser, Stampede, and Boca Reservoirs for April through October and Other months are shown in Table 7.6-5. The percentages of visitation for the end of the month reservoir storage levels are calculated using the above equations. Again, percentages of visitation correspond to scale values which in turn correspond to end of the month reservoir storage levels.

Survey year visitation relative to end of the month reservoir storage levels are the same because of end of the month reservoir storage levels. The percentages of visitation are shown in Table 7.6-6. Visitation would differ under alternative reservoir storage levels.

Visitation and end of the month reservoir storage level relationships for Donner Lake and Prosser, Stampede, and Boca Reservoirs are also shown in Figures 7.6-1, 7.6-2, 7.6-3, and 7.6-4.

Table 7.6-1. Scale Values for Reservoir Storage Levels.

	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boon Reservoir
Reservoir Storage Level 1 in Acre-feet	9,660	29,840	226,500	40,870
Reservoir Storage Level 2 in Acre-feet	8,694	26,856	203,850	36,783
Reservoir Storage Level 3 in Acre-feet	7,728	23,872	181,200	32,696
Reservoir Storage Level 4 in Acre-feet	6,762	20,888	158,550	28,609
Reservoir Storage Level 5 in Acre-feet	5,796	17,904	135,900	24,522
Reservoir Storage Level 6 in Acre-feet		14,920	113,250	20,435
Reservoir Storage Level 7 in Acre-feet		11,936	90,600	16,348
Reservoir Storage Level 8 in Acre-feet		8,952	67,950	12,261
Reservoir Storage Level 9 in Acre-feet		5,968	45,300	8,174
Reservoir Storage Level 10 in Acre-feet		2,984	22,650	4,087
Reservoir Storage Level 11 in Acre-feet		0	0	0
Scale Value for Reservoir Storage Level 1	5.00	11.00	11.00	11.00
Scale Value for Reservoir Storage Level 2	4.00	10.00	10.00	10.00
Scale Value for Reservoir Storage Level 3	3.00	9.00	9.00	9.00
Scale Value for Reservoir Storage Level 4	2.00	8.00	8.00	8.00
Scale Value for Reservoir Storage Level 5	1.00	7.00	7.00	7.00
Scale Value for Reservoir Storage Level 6		6.00	6.00	6.00
Scale Value for Reservoir Storage Level 7		5.00	5.00	5.00
Scale Value for Reservoir Storage Level 8		4.00	4.00	4.00
Scale Value for Reservoir Storage Level 9		3.00	3.00	3.00
Scale Value for Reservoir Storage Level 10		2.00	2.00	2.00
Scale Value for Reservoir Storage Level 11		1.00	1.00	1.00

Table 7.6-2. End of the Month Reservoir Storage Levels.

	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boca Reservoir
April End of the Month Reservoir Storage Level in Acre-Feet	4,930	9,767	80,186	26,763
May End of the Month Reservoir Storage Level in Acre-Feet	9,300	16,414	113,577	37,473
June End of the Month Reservoir Storage Level in Acre-Feet	9,600	20,957	166,955	38,557
July End of the Month Reservoir Storage Level in Acre-Feet	9,420	22,110	177,424	38,084
August End of the Month Reservoir Storage Level in Acre-Feet	8,880	21,691	174,288	34,582
September End of the Month Reservoir Storage Level in Acre-Feet	5,300	14,394	172,442	23,927
October End of the Month Reservoir Storage Level in Acre-Feet	3,150	10,050	170,696	16,419
Other Months Average End of the Month Reservoir Storage Level in Acre-Feet	3,366	9,854	113,263	9,561
January End of the Month Reservoir Storage Level in Acre-Feet	3,290	9,827	73,944	5,247
February End of the Month Reservoir Storage Level in Acre-Feet	3,320	9,723	75,751	4,396
March End of the Month Reservoir Storage Level in Acre-Feet	4,290	9,642	76,677	2,955
November End of the Month Reservoir Storage Level in Acre-Feet	2,980	9,981	170,433	17,042
December End of the Month Reservoir Storage Level in Acre-Feet	2,950	10,098	169,510	18,163

Table 7.6-3. Scale Values for End of the Month Reservoir Storage Levels.

	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boca Reservoir
Scale Value for April End of the Month Reservoir Storage Level	1.00	4.27	4.54	7.55
Scale Value for May End of the Month Reservoir Storage Level	4.63	6.50	6.01	10.17
Scale Value for June End of the Month Reservoir Storage Level	4.94	8.02	8.37	10.49
Scale Value for July End of the Month Reservoir Storage Level	4.75	8.41	8.83	10.32
Scale Value for August End of the Month Reservoir Storage Level	4.19	8.27	8.69	9.46
Scale Value for September End of the Month Reservoir Storage Level	1.00	5.82	8.61	6.85
Scale Value for October End of the Month Reservoir Storage Level	1.00	4.37	8.54	5.02
Scale Value for Other Months End of the Month Reservoir Storage Level	1.00	4.30	6.00	3.34

Table 7.6-4. Indicated Number of Visits per Respondent for Reservoir Storage Levels.

	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boca Reservoir
Number of Visits per Respondent for Reservoir Storage Level 1	3.11	3.03	3.08	5.55
Number of Visits per Respondent for Reservoir Storage Level 2	3.07	3.03	3.02	5.55
Number of Visits per Respondent for Reservoir Storage Level 3	2.94	2.94	2.94	5.06
Number of Visits per Respondent for Reservoir Storage Level 4	2.72	2.78	2.77	4.68
Number of Visits per Respondent for Reservoir Storage Level 5	2.57	2.59	2.61	4.03
Number of Visits per Respondent for Reservoir Storage Level 6		2.50	2.47	3.68
Number of Visits per Respondent for Reservoir Storage Level 7		2.16	1.88	2.90
Number of Visits per Respondent for Reservoir Storage Level 8		2.06	1.84	2.81
Number of Visits per Respondent for Reservoir Storage Level 9		0.47	0.63	1.84
Number of Visits per Respondent for Reservoir Storage Level 10		0.25	0.55	1.29
Number of Visits per Respondent for Reservoir Storage Level 11		0.25	0.48	0.26
Percentage of Visitation for Reservoir Storage Level 1	100.00%	100.00%	100.00%	100.00%
Percentage of Visitation for Reservoir Storage Level 2	98.71%	100.00%	98.05%	100.00%
Percentage of Visitation for Reservoir Storage Level 3	94.53%	97.03%	95.45%	91.17%
Percentage of Visitation for Reservoir Storage Level 4	87.46%	91.75%	89.94%	84.32%
Percentage of Visitation for Reservoir Storage Level 5	82.64%	85.48%	84.74%	72.61%
Percentage of Visitation for Reservoir Storage Level 6		82.51%	80.19%	66.31%
Percentage of Visitation for Reservoir Storage Level 7		71.25%	61.04%	52.25%
Percentage of Visitation for Reservoir Storage Level 8		67.99%	59.74%	50.63%
Percentage of Visitation for Reservoir Storage Level 9		15.51%	20.45%	33.15%
Percentage of Visitation for Reservoir Storage Level 10		8.25%	17.86%	23.24%
Percentage of Visitation for Reservoir Storage Level 11		8.25%	15.58%	4.68%

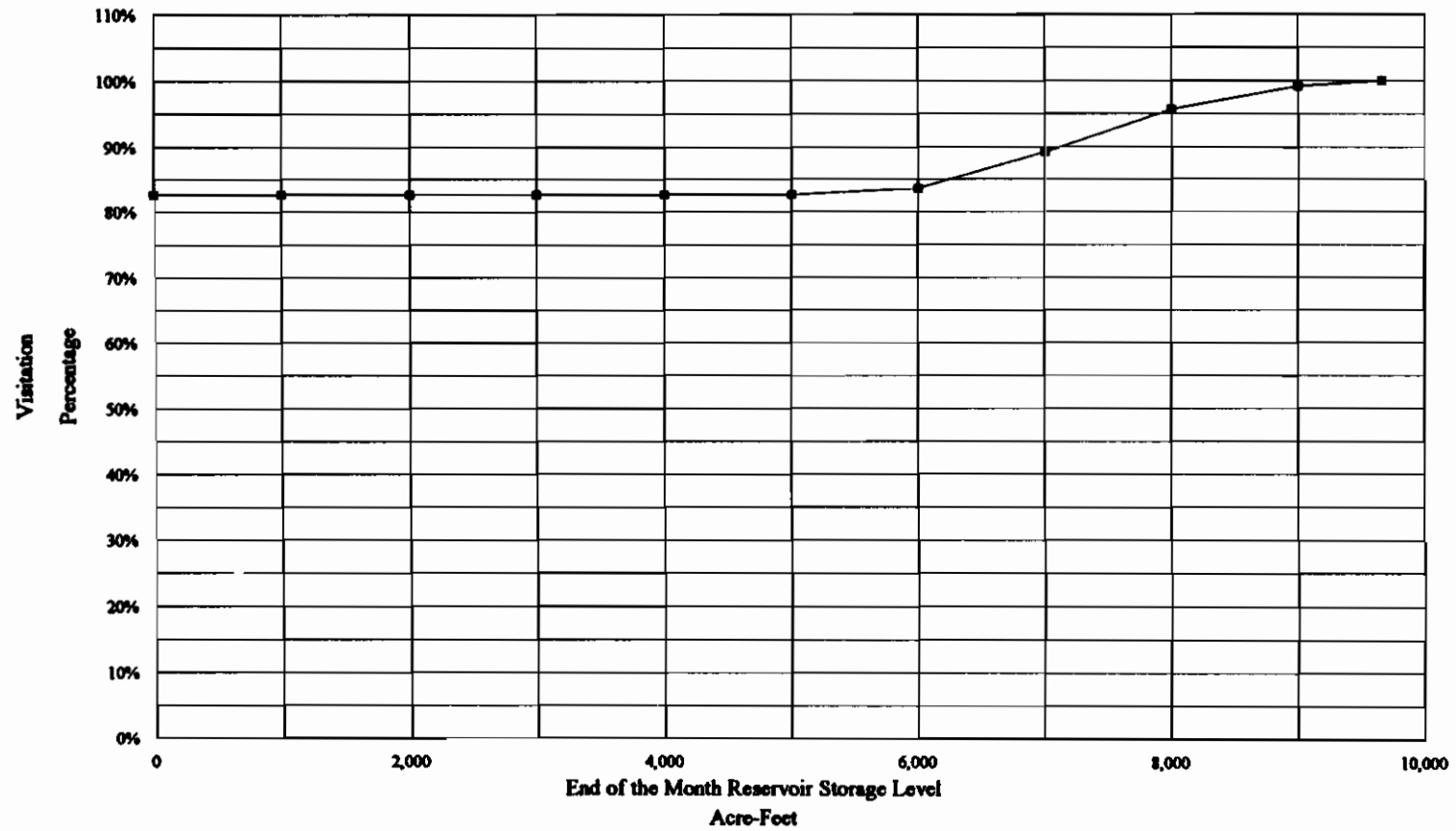
**Table 7.6-5. Visitation Relative to End of the Month Reservoir Storage Levels.**

	Donner Lake	Promer Reservoir	Stampede Reservoir	Boon Reservoir
Visitation Relative to April End of the Month Reservoir Storage Level	82.64%	68.88%	60.44%	79.01%
Visitation Relative to May End of the Month Reservoir Storage Level	99.52%	83.99%	80.26%	100.00%
Visitation Relative to June End of the Month Reservoir Storage Level	99.92%	91.86%	91.98%	100.00%
Visitation Relative to July End of the Month Reservoir Storage Level	99.68%	93.90%	94.53%	100.00%
Visitation Relative to August End of the Month Reservoir Storage Level	98.96%	93.16%	93.77%	95.22%
Visitation Relative to September End of the Month Reservoir Storage Level	82.64%	80.51%	93.32%	71.68%
Visitation Relative to October End of the Month Reservoir Storage Level	82.64%	69.20%	92.89%	52.48%
Visitation Relative to Other Months End of the Month Reservoir Storage Level	82.64%	68.98%	80.20%	39.07%

**Table 7.6-6. Survey Year Visitation Relative to End of the Month Reservoir Storage Levels.**

	Donner Lake	Promer Reservoir	Stampede Reservoir	Boon Reservoir
Visitation Relative to April End of the Month Reservoir Storage Level	82.64%	68.88%	60.44%	79.01%
Visitation Relative to May End of the Month Reservoir Storage Level	99.52%	83.99%	80.26%	100.00%
Visitation Relative to June End of the Month Reservoir Storage Level	99.92%	91.86%	91.98%	100.00%
Visitation Relative to July End of the Month Reservoir Storage Level	99.68%	93.90%	94.53%	100.00%
Visitation Relative to August End of the Month Reservoir Storage Level	98.96%	93.16%	93.77%	95.22%
Visitation Relative to September End of the Month Reservoir Storage Level	82.64%	80.51%	93.32%	71.68%
Visitation Relative to October End of the Month Reservoir Storage Level	82.64%	69.20%	92.89%	52.48%
Visitation Relative to Other Months End of the Month Reservoir Storage Level	82.64%	68.98%	80.20%	39.07%

Figure 7.6-1. Donner Lake Visitation and End of the Month Reservoir Storage Level Relationship.





**Figure 7.6-2. Prosser Reservoir Visitation and End of the Month Reservoir Storage Level Relationship.**

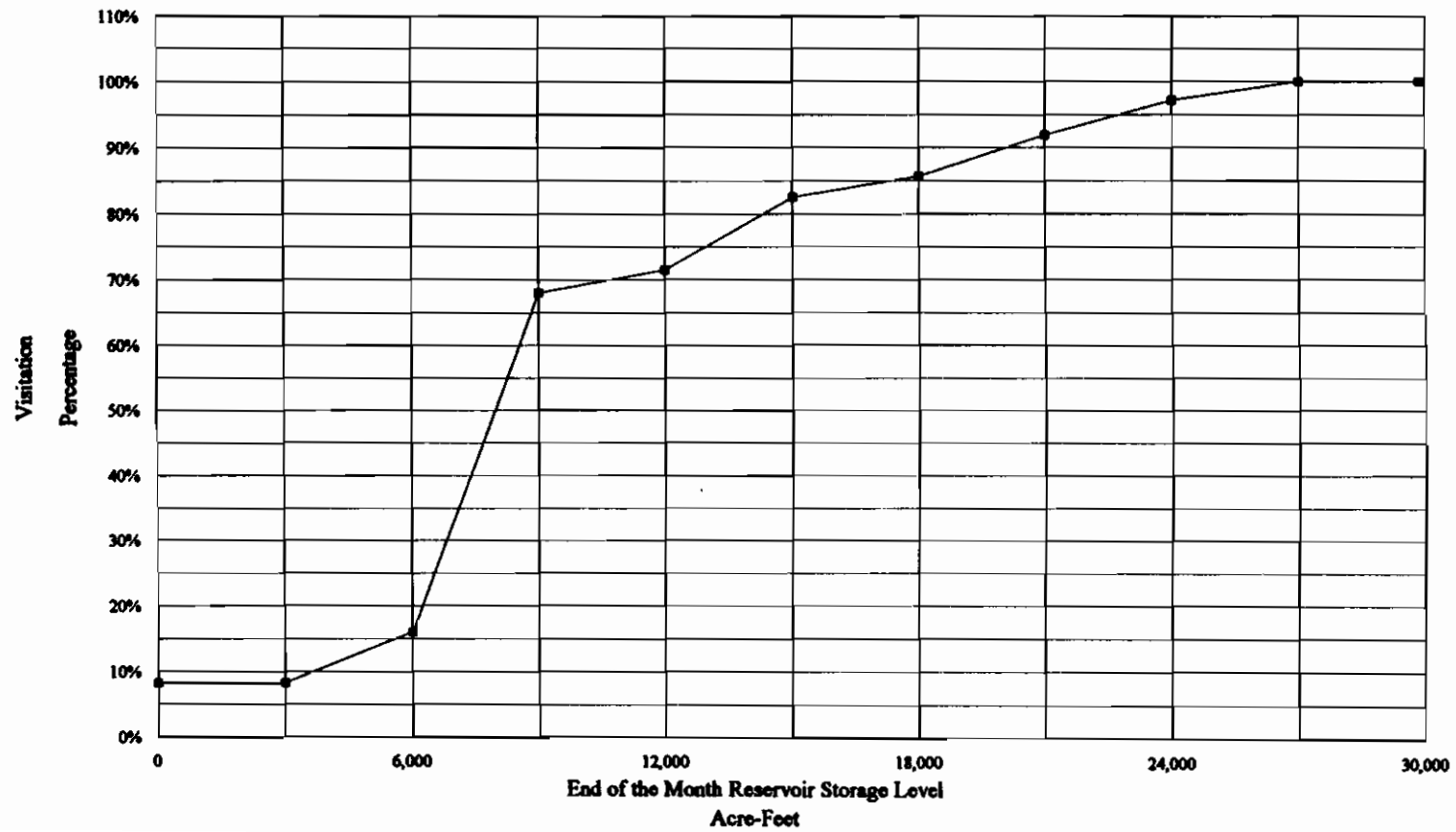


Figure 7.6-3. Stampede Reservoir Visitation and End of the Month Reservoir Storage Level Relationship.

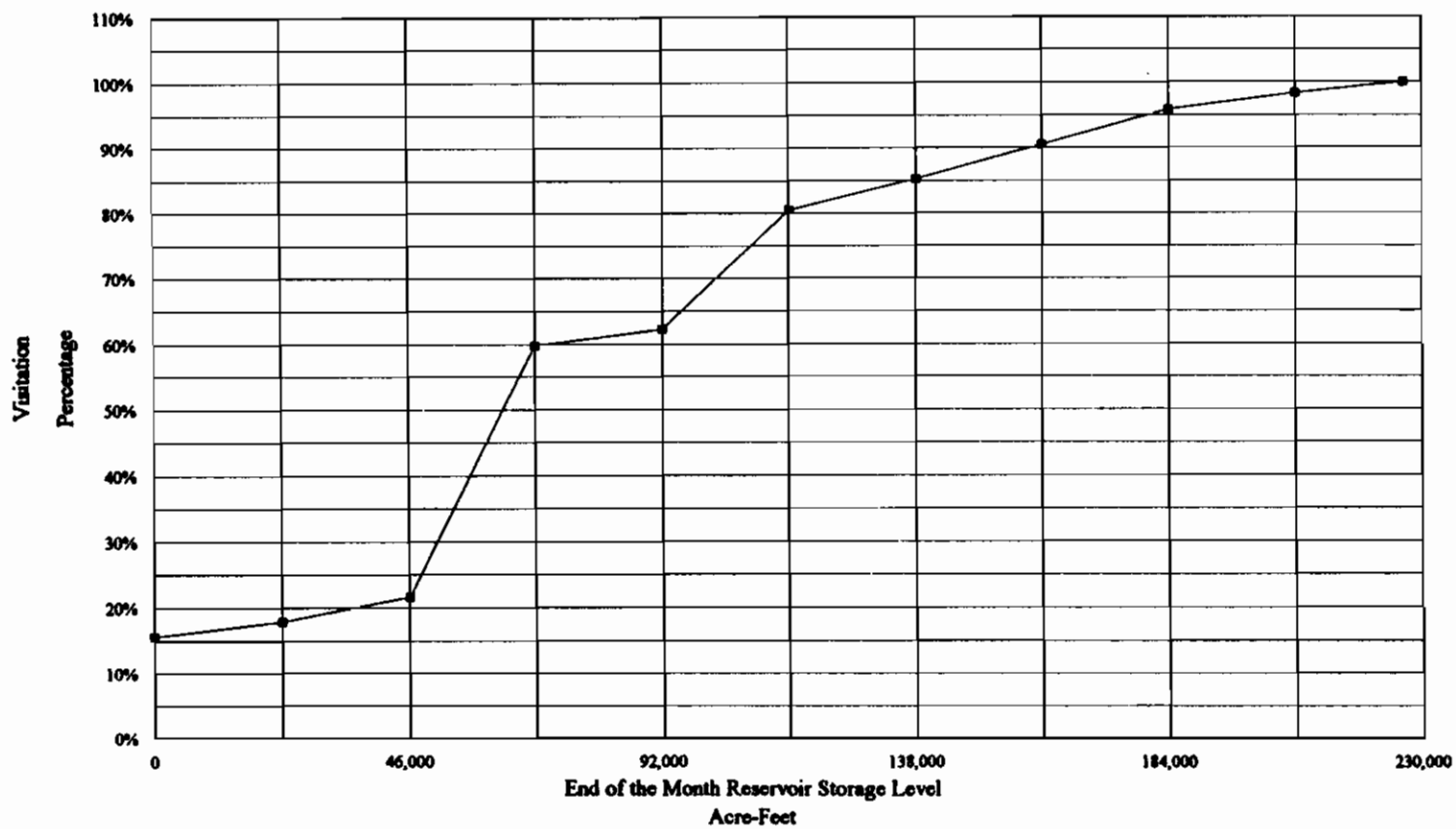
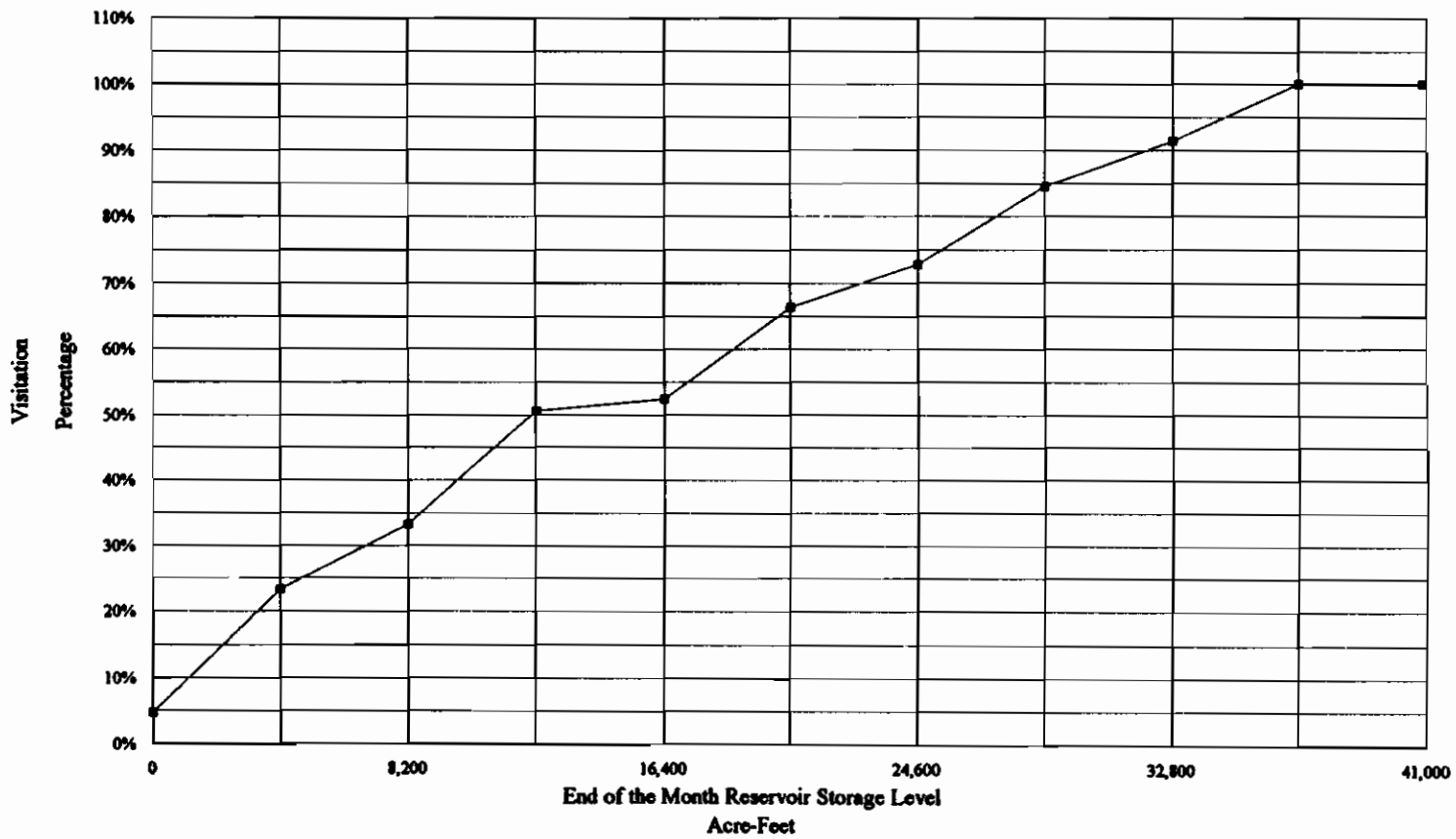


Figure 7.6-4. Boca Reservoir Visitation and End of the Month Reservoir Storage Level Relationship.



### Annual Visitation Relative to End of the Month Reservoir Storage Levels

The annual visitation relative to end of the month reservoir storage levels is derived by weighting the scale values for the end of the month reservoir storage levels for the reservoir by the expected annual visitation to the reservoir for the year and then calculating an annual percentage of visitation.

The scale values are weighted by survey year annual visitation by respondents to reservoirs and expected annual visitation to the reservoirs for the year.

The survey year annual visitation by respondents to the reservoirs is shown in Table 7.6-7. The expected annual visitation is calculated through the following equation.

$$H_{it} = \frac{G_{it} (H_{it}^0)}{G_{it}^0} \quad (7.6-3)$$

where:

$H_{it}$	is the expected annual visitation to reservoir i in month t
$G_{it}$	is the percentage of visitation corresponding to the scale value for the end of the month storage level for reservoir i in month t
$H_{it}^0$	is the survey year annual visitation by respondents to reservoir i in month t
$G_{it}^0$	is the survey year percentage of visitation corresponding to the scale value for the end of the month storage level for reservoir i in month t

The expected annual visitation is shown in Table 7.6-8. These values are the same as the values for the survey year since the end of the month reservoir storage levels are the same. The expected annual visitation would differ under alternative reservoir storage levels.

The weights for the expected annual visitation are then calculated through the following equation.

$$I_{it} = \frac{H_{it}}{\sum H_{it}} \quad (7.6-4)$$

where:  $I_{it}$  is the weight of the expected annual visitation to reservoir i in month t  
 $H_{it}$  is the expected annual visitation to reservoir i in month t

These weights are shown in Table 7.6-9. These weights show the annual pattern of visitation to the reservoirs.

The annual scale values for the reservoirs are then calculated through the following equation.

$$D_i = \sum_t D_{it} (I_{it}) \quad (7.6-5)$$

where:  $D_i$  is the annual scale value for reservoir i  
 $D_{it}$  is the scale value for the end of the month storage level for reservoir i in month t  
 $I_{it}$  is the weight of the expected annual visitation to reservoir i in month t

The weighted scale values are shown by month and by reservoir in Table 7.6-10. The summation of these weighted scale values is the annual scale value. Corresponding to an annual scale value is an annual percentage of visitation.

The annual percentage of visitation corresponding to the annual scale value is then calculated through the following equation.

$$\text{If } E_i \geq D_i \geq F_i \text{ scale value, then visitation } G_i = \alpha_i + \beta_i (D_i) \quad (7.6-6)$$

where:

- $E_i$  is the high scale value for reservoir i
- $D_i$  is the annual scale value for reservoir i
- $F_i$  is the low scale value for reservoir i
- $G_i$  is the annual percentage of visitation corresponding to the annual scale value for reservoir i
- $\alpha_i$  is the annual percentage of visitation constant term for reservoir i
- $\beta_i$  is the annual percentage of visitation slope coefficient term for reservoir i

This equation is formulated to linearly interpolate an annual scale value to an annual percentage of visitation.

Separate equations for annual scale value and reservoir storage levels are formulated for Donner Lake and Prosser, Stampede, and Boca Reservoirs. These equations are provided below by reservoir.

#### Donner Lake

If  $5 \geq D_{it} > 4$  scale value, then visitation  $G_{it} = .935691 + .012862 (D_{it})$

If  $4 \geq D_{it} > 3$  scale value, then visitation  $G_{it} = .819936 + .041801 (D_{it})$

If  $3 \geq D_{it} > 2$  scale value, then visitation  $G_{it} = .733119 + .070740 (D_{it})$

If  $2 \geq D_{it} > 1$  scale value, then visitation  $G_{it} = .778135 + .048232 (D_{it})$

If  $1 = D_{it}$  scale value, then visitation  $G_{it} = .826367$

### Prosser Reservoir

If  $11 \geq D_{it} > 10$  scale value, then visitation  $G_{it} = 1.000000 + .000000 (D_{it})$

If  $10 \geq D_{it} > 9$  scale value, then visitation  $G_{it} = .702970 + .029703 (D_{it})$

If  $9 \geq D_{it} > 8$  scale value, then visitation  $G_{it} = .495050 + .052805 (D_{it})$

If  $8 \geq D_{it} > 7$  scale value, then visitation  $G_{it} = .415842 + .062706 (D_{it})$

If  $7 \geq D_{it} > 6$  scale value, then visitation  $G_{it} = .646865 + .029703 (D_{it})$

If  $6 \geq D_{it} > 5$  scale value, then visitation  $G_{it} = .151815 + .112211 (D_{it})$

If  $5 \geq D_{it} > 4$  scale value, then visitation  $G_{it} = .547855 + .033003 (D_{it})$

If  $4 \geq D_{it} > 3$  scale value, then visitation  $G_{it} = -1.419142 + .524752 (D_{it})$

If  $3 \geq D_{it} > 2$  scale value, then visitation  $G_{it} = -.062706 + .072607 (D_{it})$

If  $2 \geq D_{it} > 1$  scale value, then visitation  $G_{it} = .082508 + .000000 (D_{it})$

If  $1 = D_{it}$  scale value, then visitation  $G_{it} = .082508$

### Stampede Reservoir

If  $11 \geq D_{it} > 10$  scale value, then visitation  $G_{it} = .785714 + .019481 (D_{it})$

If  $10 \geq D_{it} > 9$  scale value, then visitation  $G_{it} = .720779 + .025974 (D_{it})$

If  $9 \geq D_{it} > 8$  scale value, then visitation  $G_{it} = .457792 + .055195 (D_{it})$

If  $8 \geq D_{it} > 7$  scale value, then visitation  $G_{it} = .483766 + .051948 (D_{it})$

If  $7 \geq D_{it} > 6$  scale value, then visitation  $G_{it} = .529221 + .045455 (D_{it})$

If  $6 \geq D_{it} > 5$  scale value, then visitation  $G_{it} = -.347403 + .191558 (D_{it})$

If  $5 \geq D_{it} > 4$  scale value, then visitation  $G_{it} = .545455 + .012987 (D_{it})$

If  $4 \geq D_{it} > 3$  scale value, then visitation  $G_{it} = -.974026 + .392857 (D_{it})$

If  $3 \geq D_{it} > 2$  scale value, then visitation  $G_{it} = .126623 + .025974 (D_{it})$

If  $2 \geq D_{it} > 1$  scale value, then visitation  $G_{it} = .133117 + .022727 (D_{it})$

If  $1 = D_{it}$  scale value, then visitation  $G_{it} = .155844$

## Boca Reservoir

If  $11 \geq D_{it} > 10$  scale value, then visitation  $G_{it} = 1.000000 + .000000 (D_{it})$

If  $10 \geq D_{it} > 9$  scale value, then visitation  $G_{it} = .117117 + .088288 (D_{it})$

If  $9 \geq D_{it} > 8$  scale value, then visitation  $G_{it} = .295495 + .068468 (D_{it})$

If  $8 \geq D_{it} > 7$  scale value, then visitation  $G_{it} = -.093694 + .117117 (D_{it})$

If  $7 \geq D_{it} > 6$  scale value, then visitation  $G_{it} = .284685 + .063063 (D_{it})$

If  $6 \geq D_{it} > 5$  scale value, then visitation  $G_{it} = -.180180 + .140541 (D_{it})$

If  $5 \geq D_{it} > 4$  scale value, then visitation  $G_{it} = .441441 + .016216 (D_{it})$

If  $4 \geq D_{it} > 3$  scale value, then visitation  $G_{it} = -.192793 + .174775 (D_{it})$

If  $3 \geq D_{it} > 2$  scale value, then visitation  $G_{it} = .034234 + .099099 (D_{it})$

If  $2 \geq D_{it} > 1$  scale value, then visitation  $G_{it} = -.138739 + .185586 (D_{it})$

If  $1 = D_{it}$  scale value, then visitation  $G_{it} = .046847$

Annual visitation relative to end of the month reservoir storage levels for Donner Lake and Prosser, Stampede, and Boca Reservoirs are given in Table 7.6-11. An annual percentage of visitation corresponds to an annual scale value which in turn corresponds to end of the month reservoir storage levels.

Survey year annual visitation relative to end of the month reservoir storage levels are the same because of end of the month reservoir storage levels being the same. The annual percentages of visitation are shown in Table 7.6-12. Annual visitation would differ under alternative reservoir storage levels.

Annual patterns of visitation for Donner Lake and Prosser, Stampede, and Boca Reservoirs are also shown in Figures 7.6-5, 7.6-6, 7.6-7, and 7.6-8.



**Table 7.6-7. Survey Year Annual Visitation by Respondents by Month by Reservoir.**

	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boon Reservoir
Number of Respondents that Visit during April	20	8	19	24
Number of Respondents that Visit during May	35	15	41	53
Number of Respondents that Visit during June	71	26	86	69
Number of Respondents that Visit during July	103	35	83	75
Number of Respondents that Visit during August	96	33	97	78
Number of Respondents that Visit during September	44	17	43	51
Number of Respondents that Visit during October	16	11	21	29
Number of Respondents that Visit during Other Months	21	3	2	11
<b>Total</b>	<b>406</b>	<b>148</b>	<b>392</b>	<b>390</b>

**Table 7.6-8. Expected Annual Visitation by Month by Reservoir.**

	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boon Reservoir
Expected Visitation during April	20	8	19	24
Expected Visitation during May	35	15	41	53
Expected Visitation during June	71	26	86	69
Expected Visitation during July	103	35	83	75
Expected Visitation during August	96	33	97	78
Expected Visitation during September	44	17	43	51
Expected Visitation during October	16	11	21	29
Expected Visitation during Other Months	21	3	2	11
<b>Total</b>	<b>406</b>	<b>148</b>	<b>392</b>	<b>390</b>

**Table 7.6-9. Weights for Expected Annual Visitation by Month by Reservoir.**

	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boon Reservoir
Weight for expected Visitation during April	4.93%	5.41%	4.85%	6.15%
Weight for expected Visitation during May	8.62%	10.14%	10.46%	13.59%
Weight for expected Visitation during June	17.49%	17.57%	21.94%	17.69%
Weight for expected Visitation during July	25.37%	23.65%	21.17%	19.23%
Weight for expected Visitation during August	23.65%	22.30%	24.74%	20.00%
Weight for expected Visitation during September	10.84%	11.49%	10.97%	13.08%
Weight for expected Visitation during October	3.94%	7.43%	5.36%	7.44%
Weight for expected Visitation during Other Months	5.17%	2.03%	0.51%	2.82%

**Table 7.6-10. Annual Scale Values by Reservoir.**

	<b>Donner Lake</b>	<b>Prosser Reservoir</b>	<b>Stampede Reservoir</b>	<b>Boon Reservoir</b>
Weighted Scale Value for April End of the Month Reservoir Storage Level	0.05	0.23	0.22	0.46
Weighted Scale Value for May End of the Month Reservoir Storage Level	0.40	0.66	0.63	1.38
Weighted Scale Value for June End of the Month Reservoir Storage Level	0.86	1.41	1.84	1.85
Weighted Scale Value for July End of the Month Reservoir Storage Level	1.20	1.99	1.87	1.98
Weighted Scale Value for August End of the Month Reservoir Storage Level	0.99	1.84	2.15	1.89
Weighted Scale Value for September End of the Month Reservoir Storage Level	0.11	0.67	0.94	0.90
Weighted Scale Value for October End of the Month Reservoir Storage Level	0.04	0.32	0.46	0.37
Weighted Scale Value for Other Months End of the Month Reservoir Storage Level	0.05	0.09	0.03	0.09
<b>Annual Scale Value</b>	<b>3.71</b>	<b>7.21</b>	<b>8.14</b>	<b>8.93</b>

**Table 7.6-11. Annual Visitation Relative to End of the Month Reservoir Storage Levels.**

	<b>Donner Lake</b>	<b>Prosser Reservoir</b>	<b>Stampede Reservoir</b>	<b>Boon Reservoir</b>
Annual Visitation Relative to the End of the Month Reservoir Storage Levels	97.49%	86.80%	90.71%	90.69%

**Table 7.6-12. Survey Year Annual Visitation Relative to End of the Month Reservoir Storage Levels.**

	<b>Donner Lake</b>	<b>Prosser Reservoir</b>	<b>Stampede Reservoir</b>	<b>Boon Reservoir</b>
Annual Visitation Relative to the End of the Month Reservoir Storage Levels	97.49%	86.80%	90.71%	90.69%

Figure 7.6-5. Donner Lake Annual Pattern of Visitation.

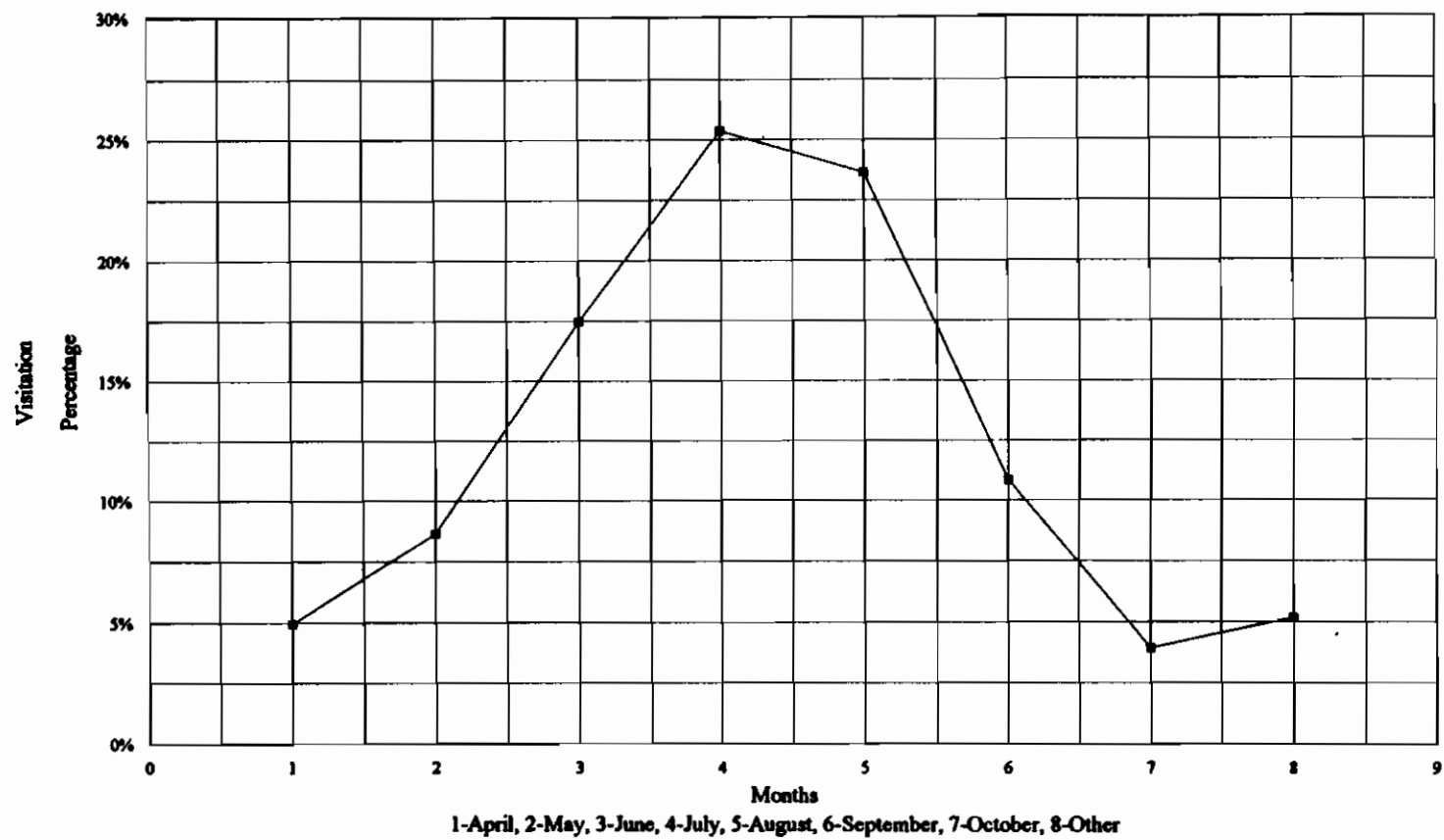


Figure 7.6-6. Prosser Reservoir Annual Pattern of Visitation.

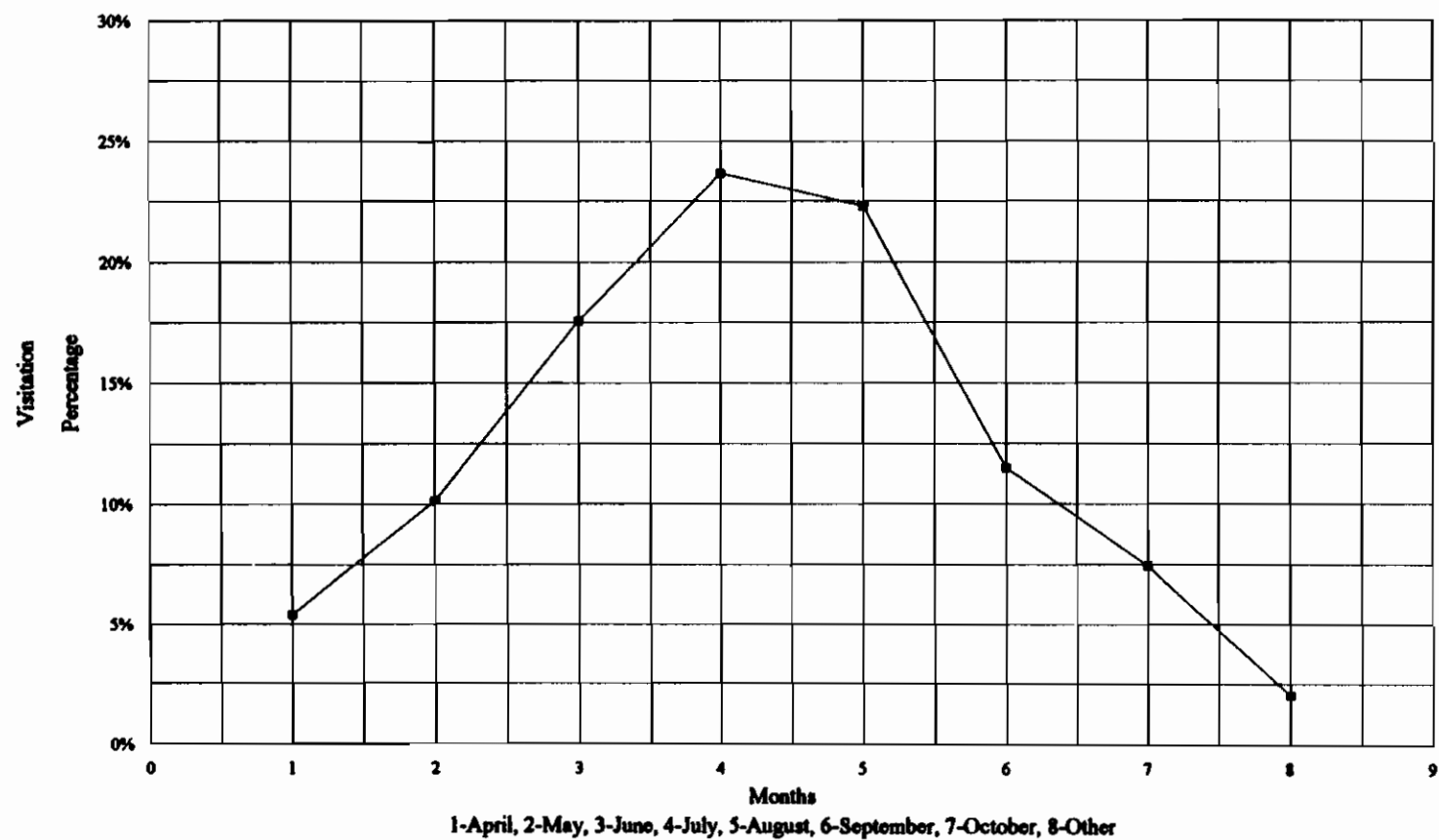


Figure 7.6-7. Stampede Reservoir Annual Pattern of Visitation.

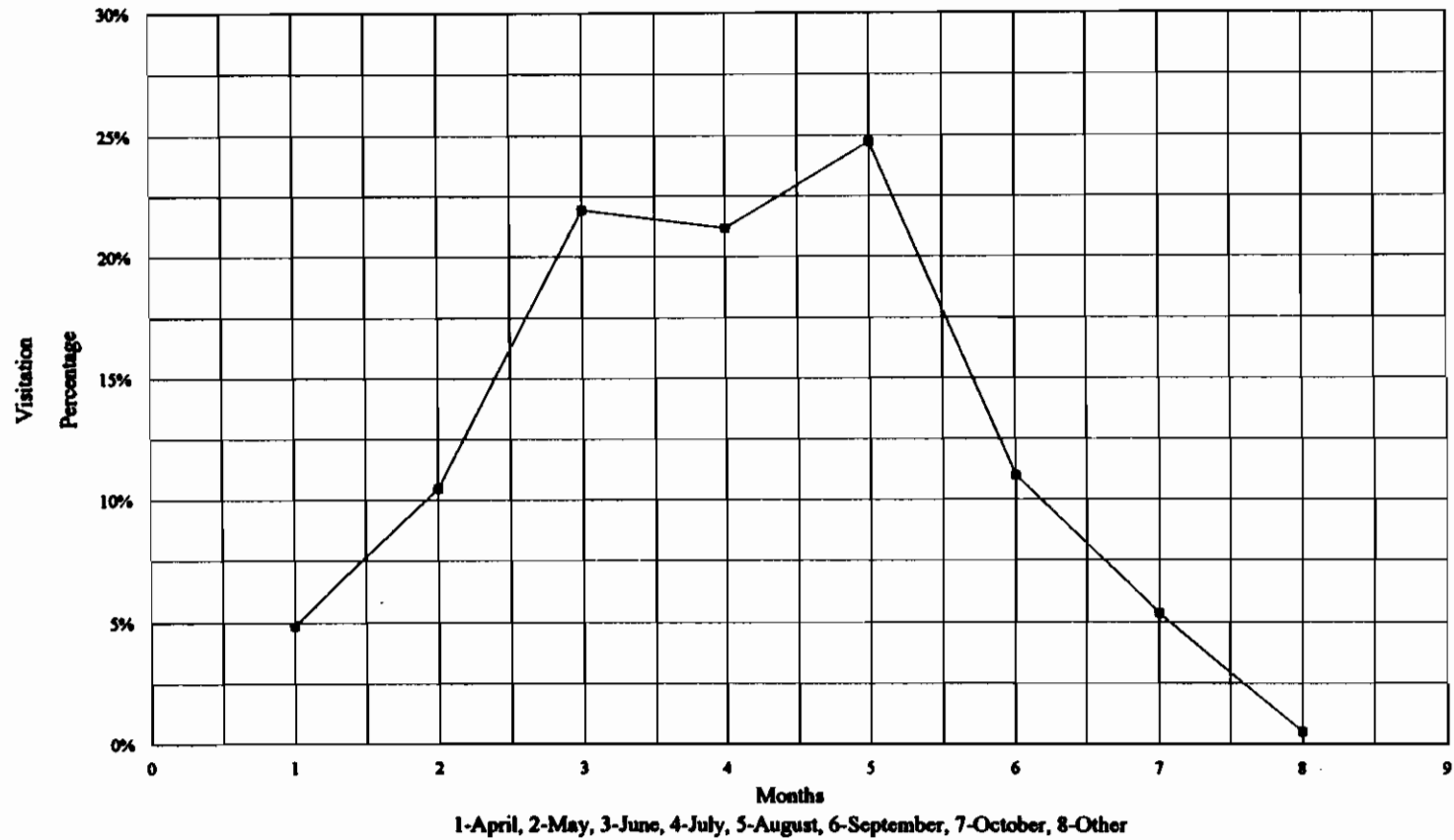
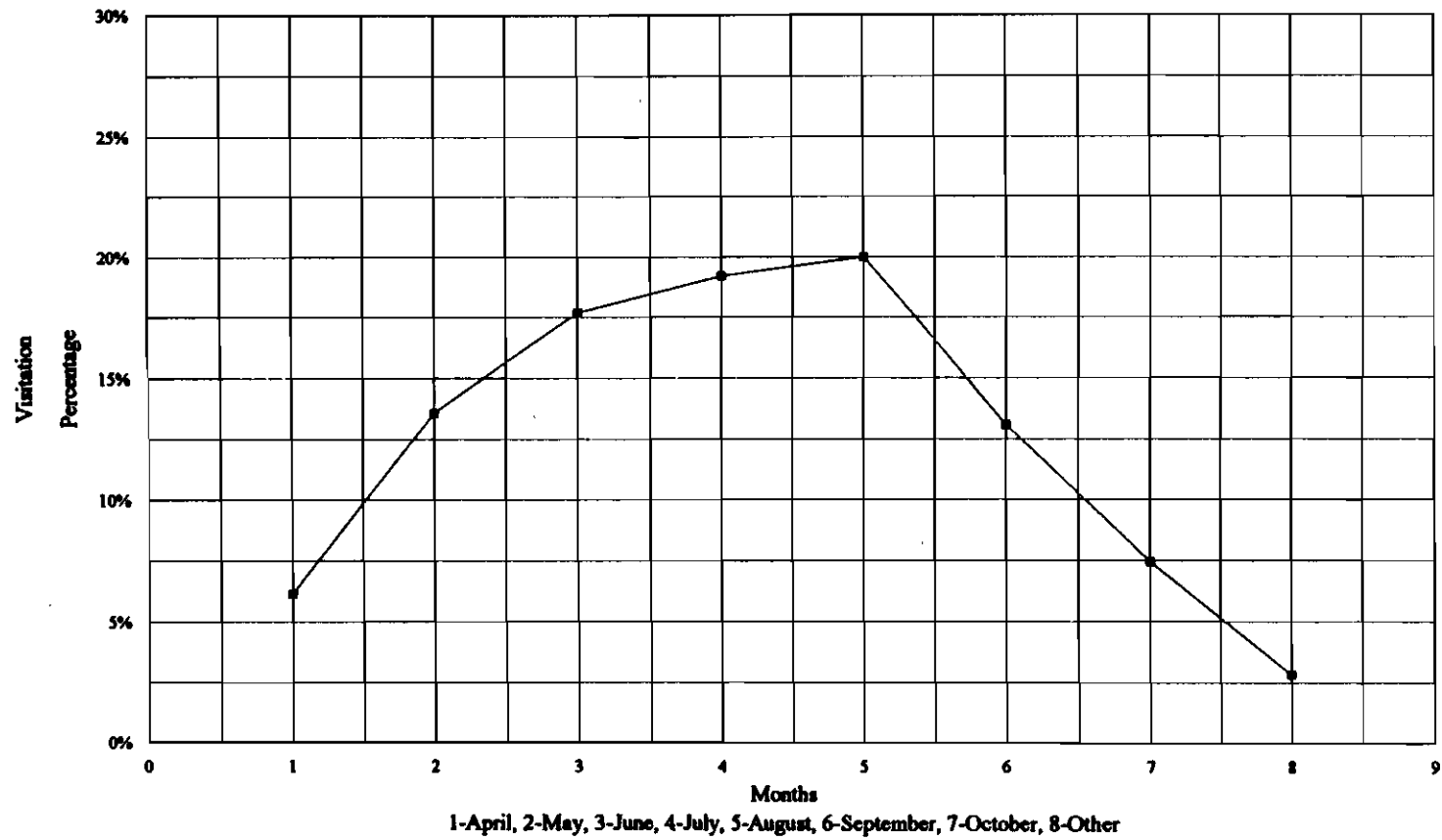


Figure 7.6-8. Boca Reservoir Annual Pattern of Visitation.



### Annual Number of Camping Visitors

The annual number of camping visitors to the reservoirs is derived by taking the survey year number of camping visitors for the campgrounds at the reservoirs and multiplying by the ratio of annual visitation for the given year to the annual visitation for survey year. The annual number of camping visitors is distributed monthly by the weights of the expected annual visitation to show the annual pattern of visitation.

The survey year number of camping visitors for the campgrounds at the reservoirs are taken from California State Park and U.S. Forest Service data. This data is shown in Table 7.6-13. There are twelve campgrounds in the area. One campground is near Donner Lake. Four campgrounds are near Prosser Reservoir. Another three campgrounds are near Stampede Reservoir. And the remaining four campgrounds are near Boca Reservoir. The annual number of camping visitors is provided for each campground.

The annual number of camping visitors for the given year is calculated through the following equation.

$$J_i = J_i^0 \frac{G_i}{G_i^0} \quad (7.6-7)$$

where:

$J_i$	is the annual number of camping visitors for reservoir i
$J_i^0$	is the survey year annual number of camping visitors for reservoir i
$G_i$	is the annual percentage of visitation corresponding to the annual scale value for reservoir i
$G_i^0$	is the survey year annual percentage of visitation corresponding to the annual scale value for reservoir i

The equation is formulated so that if the annual percentage of visitation for the given year is greater than the survey year annual percentage of visitation then the annual number of camping visitors for the given year is also greater. Likewise if the annual percentage of visitation for the given year is less than the survey year annual percentage of visitation then the annual number of camping visitors for the given year is also less.

The annual number of camping visitors by reservoir are shown in Table 7.6-14.

The annual number of camping visitors are then distributed by the weights for expected annual visitation to show the annual number of camping visitors by month. This is done through the following equation.

$$K_{it} = J_i ( I_{it} ) \quad (7.6-8)$$

where:  $K_{it}$  is the number of annual camping visitors to reservoir  $i$  in month  $t$   
 $J_i$  is the annual number of camping visitors for reservoir  $i$   
 $I_{it}$  is the weight of the expected annual visitation to reservoir  $i$  in month  $t$ .

The annual number of camping visitors by month to the reservoirs are shown in Table 7.6-15. Together the annual number of camping visitors by month show the annual pattern of visitation to the reservoir by camping visitors.



Table 7.6-13. Annual Number of Camping Visitors by Campground by Reservoir.

	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boca Reservoir
Number of Camping Visitors for Donner State Park	56,715			
Number of Camping Visitors for Lakeside Campground		0		
Number of Camping Visitors for Prosser Family Campground		15,031		
Number of Camping Visitors for Prosser Ranch Campground		3,877		
Number of Camping Visitors for Annie McCloud Campground		0		
Number of Camping Visitors for Davies Creek Campground			1,111	
Number of Camping Visitors for Emigrant Campground			20,679	
Number of Camping Visitors for Logger Campground			97,132	
Number of Camping Visitors for Boca Campground				0
Number of Camping Visitors for Boca Rest Campground				29,427
Number of Camping Visitors for Boca Spring Campground				0
Number of Camping Visitors for Boyington Mill Campground				3,480
Total Number of Camping Visitors for Campgrounds	56,715	18,908	118,921	32,907

Note: There are 152 open campsites at Donner Lake, 46 open campsites at Prosser Reservoir, 216 to 256 open campsites at Stampede Reservoir, and 59 open campsites at Boca Reservoir.

Table 7.6-14. Annual Number of Camping Visitors by Reservoir.

	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boca Reservoir
Annual Number of Camping Visitors	56,715	18,908	118,921	32,907

Table 7.6-15. Annual Number of Camping Visitors by Month by Reservoir.

	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boca Reservoir
Number of Camping Visitors during April	2,794	1,022	5,764	2,025
Number of Camping Visitors during May	4,889	1,916	12,438	4,472
Number of Camping Visitors during June	9,918	3,322	26,090	5,822
Number of Camping Visitors during July	14,388	4,471	25,180	6,328
Number of Camping Visitors during August	13,410	4,216	29,427	6,581
Number of Camping Visitors during September	6,146	2,172	13,045	4,303
Number of Camping Visitors during October	2,235	1,405	6,371	2,447
Number of Camping Visitors during Other Months	2,934	383	607	928
Annual Number of Camping Visitors	56,715	18,908	118,921	32,907

### Annual Number of Day Use Visitors

The annual number of day use visitors to the reservoirs is derived by multiplying the annual number of camping visitors to the reservoirs by the ratio of day use visitors to camping visitors taken from the survey vehicle count data.

The ratio of day use visitors to camping visitors is calculated through the following equations.

$$L_i = M_i ( N_i ) \quad (7.6-9)$$

$$O_i = P_i ( Q_i ) \quad (7.6-10)$$

$$R_i = \frac{O_i}{L_i} \quad (7.6-11)$$

where:

$L_i$	is the number of camping visitors to reservoir i
$M_i$	is the number of camping visitor vehicles at reservoir i
$N_i$	is the average group size of camping respondents at reservoir i
$O_i$	is the number of day use visitors to reservoir i
$P_i$	is the number of day use visitor vehicles at reservoir i
$Q_i$	is the average group size of day use respondents at reservoir i
$R_i$	is the ratio of day use visitors to camping visitors to reservoir i

The ratios of day use visitors to camping visitors by reservoir are given in Table 7.6-16.

The annual number of day use visitors is then calculated through the following equation.

$$S_i = J_i ( R_i ) \quad (7.6-12)$$

where:

$S_i$	is the annual number of day use visitors for reservoir i
$J_i$	is the annual number of camping visitors for reservoir i
$R_i$	is the ratio of day use visitors to camping visitors to reservoir i

The annual number of day use visitors by reservoir are shown in Table 7.6-17.

The annual number of day use visitors are then distributed by the weights for expected annual visitation to show the annual number of day use visitors by month. This is done through the following equation.

$$T_{it} = S_i ( I_{it} ) \quad (7.6-13)$$

where:  $T_{it}$  is the number of annual day use visitors to reservoir i in month t  
 $S_i$  is the annual number of day use visitors for reservoir i  
 $I_{it}$  is the weight of the expected annual visitation to reservoir i in month t

The annual number of day use visitors by month to the reservoirs are shown in Table 7.6-18. Together the annual number of day use visitors by month show the annual pattern of visitation to the reservoir by day use visitors.

Table 7.6-16. Ratio of Day Use Visitors to Camping Visitors by Reservoir.

	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boca Reservoir
Average Group Size of Camping Respondents	5.24	3.73	5.12	5.10
Average Group Size of Day Use Respondents	5.02	3.13	3.89	5.02
Number of Camping Visitor Vehicles counted on May 28, 1994		26	227	98
Number of Camping Visitor Vehicles counted on June 11, 1994		44	136	16
Number of Camping Visitor Vehicles counted on June 17, 1994		11	86	9
Number of Camping Visitor Vehicles counted on June 24, 1994				
Number of Camping Visitor Vehicles counted on June 25, 1994		37	107	9
Number of Camping Visitor Vehicles counted on July 2, 1994		30	208	38
Number of Camping Visitor Vehicles counted on July 8, 1994		13	63	12
Number of Camping Visitor Vehicles counted on July 16, 1994		28	131	16
Number of Camping Visitor Vehicles counted on July 22, 1994		24	90	8
Number of Camping Visitor Vehicles counted on July 23, 1994				
Number of Camping Visitor Vehicles counted on August 6, 1994		32	86	12
Number of Camping Visitor Vehicles counted on August 12, 1994				
Number of Camping Visitor Vehicles counted on August 20, 1994		21	93	10
Number of Camping Visitor Vehicles counted on September 3, 1994		23	70	11
Total Number of Camping Visitor Vehicles	N.A.	289	1,297	239
Number of Day Use Visitor Vehicles counted on May 28, 1994		33	36	43
Number of Day Use Visitor Vehicles counted on June 11, 1994		4	39	62
Number of Day Use Visitor Vehicles counted on June 17, 1994		3	12	22
Number of Day Use Visitor Vehicles counted on June 24, 1994				
Number of Day Use Visitor Vehicles counted on June 25, 1994		16	18	28
Number of Day Use Visitor Vehicles counted on July 2, 1994		35	65	50
Number of Day Use Visitor Vehicles counted on July 8, 1994		9	14	18
Number of Day Use Visitor Vehicles counted on July 16, 1994		10	49	19
Number of Day Use Visitor Vehicles counted on July 22, 1994		4	15	9
Number of Day Use Visitor Vehicles counted on July 23, 1994				
Number of Day Use Visitor Vehicles counted on August 6, 1994		2	21	12
Number of Day Use Visitor Vehicles counted on August 12, 1994				
Number of Day Use Visitor Vehicles counted on August 20, 1994		9	40	20
Number of Day Use Visitor Vehicles counted on September 3, 1994		6	26	23
Total Number of Day Use Visitor Vehicles	N.A.	131	335	306
Number of Camping Visitors	N.A.	1,078	6,641	1,219
Number of Day Use Visitors	N.A.	410	1,303	1,536
Ratio of Day Use Visitors to Camping Visitors /1	3.72	0.38	0.20	1.26

1. Ratio of day use visitors to camping visitors for Donner Lake is based on estimates of recreation visits for 1993. Estimates are 195,099 camping visits and 138,246 day use visits.

Table 7.6-17. Annual Number of Day Use Visitors by Reservoir.

	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boca Reservoir
Annual Number of Day Use Visitors	211,037	7,192	23,337	41,470

Table 7.6-18. Annual Number of Day Use Visitors by Month by Reservoir.

	Donner Lake	Prosser Reservoir	Stampede Reservoir	Boca Reservoir
Number of Day Use Visitors during April	10,396	389	1,131	2,552
Number of Day Use Visitors during May	18,193	729	2,441	5,636
Number of Day Use Visitors during June	36,905	1,263	5,120	7,337
Number of Day Use Visitors during July	53,539	1,701	4,941	7,975
Number of Day Use Visitors during August	49,900	1,604	5,775	8,294
Number of Day Use Visitors during September	22,871	826	2,560	5,423
Number of Day Use Visitors during October	8,317	535	1,250	3,084
Number of Day Use Visitors during Other Months	10,916	146	119	1,170
Annual Number of Day Use Visitors	211,037	7,192	23,337	41,470

### Annual Number of Camping Visitor Groups

The annual number of camping visitor groups to the reservoirs is derived by dividing the annual number of camping visitors by month by the group size. This is done through the following equation.

$$U_{it} = \frac{K_{it}}{N_i} \quad (7.6-14)$$

where:  $U_{it}$  is the annual number of camping visitor groups to reservoir i in month t  
 $K_{it}$  is the number of annual camping visitors to reservoir i in month t  
 $N_i$  is the average group size of camping respondents at reservoir i

The annual number of camping visitor groups by month to the reservoirs are shown in Table 7.6-19.

**Table 7.6-19. Annual Number of Camping Visitor Groups by Month by Reservoir.**

	<b>Donner Lake</b>	<b>Prosser Reservoir</b>	<b>Stampede Reservoir</b>	<b>Boon Reservoir</b>
Number of Camping Visitor Groups during April	1,834	548	2,252	794
Number of Camping Visitor Groups during May	3,210	1,028	4,859	1,754
Number of Camping Visitor Groups during June	6,511	1,781	10,191	2,283
Number of Camping Visitor Groups during July	9,446	2,398	9,836	2,482
Number of Camping Visitor Groups during August	8,804	2,261	11,495	2,581
Number of Camping Visitor Groups during September	4,035	1,165	5,096	1,688
Number of Camping Visitor Groups during October	1,467	754	2,489	960
Number of Camping Visitor Groups during Other Months	1,926	206	237	364
<b>Annual Number of Camping Visitor Groups</b>	<b>37,233</b>	<b>10,138</b>	<b>46,453</b>	<b>12,905</b>

### Annual Number of Day Use Visitor Groups

The annual number of day use visitor groups to the reservoirs is derived by dividing the annual number of day use visitors by month by the group size. This is done through the following equation.

$$V_{it} = \frac{T_{it}}{Q_i} \quad (7.6-15)$$

where:  $V_{it}$  is the annual number of day use visitor groups to reservoir i in month t  
 $T_{it}$  is the number of annual day use visitors to reservoir i in month t  
 $Q_i$  is the average group size of day use respondents at reservoir i

The annual number of day use visitor groups by month to the reservoirs are shown in Table 7.6-20.



**Table 7.6-20. Annual Number of Day Use Visitor Groups by Month by Reservoir.**

	<b>Donner Lake</b>	<b>Prosser Reservoir</b>	<b>Stampede Reservoir</b>	<b>Boon Reservoir</b>
Number of Day Use Visitor Groups during April	1,357	248	582	1,017
Number of Day Use Visitor Groups during May	2,374	466	1,255	2,245
Number of Day Use Visitor Groups during June	4,816	807	2,632	2,923
Number of Day Use Visitor Groups during July	6,987	1,087	2,540	3,177
Number of Day Use Visitor Groups during August	6,512	1,025	2,969	3,304
Number of Day Use Visitor Groups during September	2,985	528	1,316	2,161
Number of Day Use Visitor Groups during October	1,085	342	643	1,229
Number of Day Use Visitor Groups during Other Months	1,424	93	61	466
<b>Annual Number of Day Use Visitor Groups</b>	<b>27,539</b>	<b>4,596</b>	<b>11,998</b>	<b>16,522</b>

### Annual Camping Visitor Expenditures

The annual camping visitor expenditures by reservoir are the summation of the annual number of camping visitor groups per month multiplied by the camping visitor group expenditure function value. This is done through the following equations.

$$W_{it} = U_{it} (X_i) \quad (7.6-16)$$

$$Y_i = \sum W_{it} \quad (7.6-17)$$

where:

$W_{it}$	is the annual camping visitor expenditures for reservoir i in month t
$U_{it}$	is the annual number of camping visitor groups to reservoir i in month t
$X_i$	is the camping visitor group expenditure function value for reservoir i
$Y_i$	is the annual camping visitor expenditures for reservoir i

The camping visitor group expenditure function values for each reservoir are shown in Table 7.6-21. The annual camping visitor expenditures by month by reservoir are shown in Table 7.6-22.

The annual camping visitor expenditures are proportioned by the percentage of expenditure per category indicated by camping respondents for the reservoir. This is done through the following equation.

$$Z_{ci} = Y_i (AA_{ci}) \quad (7.6-18)$$

where:

$Z_{ci}$	is the annual camping visitor expenditures by category c for reservoir i
$Y_i$	is the annual camping visitor expenditures for reservoir i
$AA_{ci}$	is the percentage of expenditure per category c for reservoir i by camping respondents

The annual camping visitor expenditures by category by reservoir are shown in Table 7.6-23.

**Table 7.6-21. Camping Visitor Group Expenditure Function Values by Reservoir.**

	<b>Donner Lake</b>	<b>Prosser Reservoir</b>	<b>Stampede Reservoir</b>	<b>Boca Reservoir</b>
Camping Visitor Group Expenditure per Day	\$36.97	\$27.90	\$39.61	\$34.40

**Table 7.6-22. Annual Camping Visitor Expenditures by Month by Reservoir.**

	<b>Donner Lake</b>	<b>Prosser Reservoir</b>	<b>Stampede Reservoir</b>	<b>Boca Reservoir</b>
Camping Visitor Expenditures during April	67,807	15,290	89,184	27,318
Camping Visitor Expenditures during May	118,663	28,668	192,451	60,327
Camping Visitor Expenditures during June	240,716	49,692	403,677	78,539
Camping Visitor Expenditures during July	349,208	66,892	389,595	85,368
Camping Visitor Expenditures during August	325,476	63,070	455,310	88,783
Camping Visitor Expenditures during September	149,176	32,491	201,838	58,050
Camping Visitor Expenditures during October	54,246	21,023	98,572	33,009
Camping Visitor Expenditures during Other Months	71,198	5,734	9,388	12,521
Annual Camping Visitor Expenditures	\$1,376,490	\$282,860	\$1,840,016	\$443,915

Table 7.6-23. Annual Camping Visitor Expenditures by Category by Reservoir.

	Donner Lake	Promer Reservoir	Stampede Reservoir	Boca Reservoir
Number of Camping Respondents	42	30	97	21
Expenditures on Licenses by Camping Respondents	0.00	0.00	533.94	69.60
Expenditures on Camping Fees by Camping Respondents	2045.82	623.10	4231.19	434.01
Expenditures on Hotel or Motel by Camping Respondents	235.20	0.00	0.00	219.98
Expenditures on Restaurant by Camping Respondents	1189.86	246.90	1081.22	120.02
Expenditures on Groceries by Camping Respondents	2392.32	1840.80	5872.95	2030.03
Expenditures on Equipment and Supplies by Camping Respondents	0.00	0.00	497.64	1.60
Expenditures on Rental by Camping Respondents	25.20	0.00	0.00	3.06
Expenditures on Fuel by Camping Respondents	654.36	365.70	2666.98	439.38
Expenditures on Other by Camping Respondents	1065.12	418.50	3766.40	688.05
Total Expenditures by Camping Respondents	\$7,607.88	\$3,495.00	\$18,650.32	\$4,005.73
Expenditures on Licenses by Camping Respondents	0.00%	0.00%	2.86%	1.74%
Expenditures on Camping Fees by Camping Respondents	26.89%	17.83%	22.69%	10.83%
Expenditures on Hotel or Motel by Camping Respondents	3.09%	0.00%	0.00%	5.49%
Expenditures on Restaurant by Camping Respondents	15.64%	7.06%	5.80%	3.00%
Expenditures on Groceries by Camping Respondents	31.45%	52.67%	31.49%	50.68%
Expenditures on Equipment and Supplies by Camping Respondents	0.00%	0.00%	2.67%	0.04%
Expenditures on Rental by Camping Respondents	0.33%	0.00%	0.00%	0.08%
Expenditures on Fuel by Camping Respondents	8.60%	10.46%	14.30%	10.97%
Expenditures on Other by Camping Respondents	14.00%	11.97%	20.19%	17.18%
Total Expenditures by Camping Respondents	100.00%	100.00%	100.00%	100.00%
Annual Camping Visitor Expenditures on Licenses	0	0	52,678	7,713
Annual Camping Visitor Expenditures on Camping Fees	370,149	50,429	417,444	48,097
Annual Camping Visitor Expenditures on Hotel or Motel	42,555	0	0	24,378
Annual Camping Visitor Expenditures on Restaurant	215,281	19,982	106,672	13,301
Annual Camping Visitor Expenditures on Groceries	432,841	148,981	579,418	224,968
Annual Camping Visitor Expenditures on Equipment and Supplies	0	0	49,097	177
Annual Camping Visitor Expenditures on Rental	4,559	0	0	339
Annual Camping Visitor Expenditures on Fuel	118,393	29,597	263,121	48,692
Annual Camping Visitor Expenditures on Other	192,712	33,870	371,588	76,250
Annual Camping Visitor Expenditures	\$1,376,490	\$282,860	\$1,840,016	\$443,915

### Annual Day Use Visitor Expenditures

The annual day use visitor expenditures by reservoir are the summation of the annual number of day use visitor groups per month multiplied by the day use visitor group expenditure function value. This is done through the following equations.

$$AB_{it} = V_{it} ( AC_i ) \quad (7.6-19)$$

$$AD_i = \sum AB_{it} \quad (7.6-20)$$

where:  $AB_{it}$  is the annual day use visitor expenditures for reservoir i in month t  
 $V_{it}$  is the number of annual day use visitor groups to reservoir i in month t  
 $AC_i$  is the day use visitor group expenditure function value for reservoir i  
 $AD_i$  is the annual day use visitor expenditures for reservoir i

The day use visitor group expenditure function values for each reservoir are shown in Table 7.6-24. The annual day use visitor expenditures by month by reservoir are shown in Table 7.6-25.

The annual day use visitor expenditures are proportioned by the percentage of expenditure per category indicated by day use respondents for the reservoir. This is done through the following equation.

$$AE_{ci} = AD_i ( AF_{ci} ) \quad (7.6-21)$$

where:  $AE_{ci}$  is the annual day use visitor expenditures by category c for reservoir i  
 $AD_i$  is the annual day use visitor expenditures for reservoir i  
 $AF_{ci}$  is the percentage of expenditure per category c for reservoir i by day use respondents

The annual day use visitor expenditures by category by reservoir are shown in Table 7.6-26.

**Table 7.6-24. Day Use Visitor Group Expenditure Function Values by Reservoir.**

	Donner Lake	Promer Reservoir	Stampede Reservoir	Boca Reservoir
Day Use Visitor Group Expenditure per Day	\$52.00	\$34.07	\$52.78	\$48.85

**Table 7.6-25. Annual Day Use Visitor Expenditures by Month by Reservoir.**

	Donner Lake	Promer Reservoir	Stampede Reservoir	Boca Reservoir
Day Use Visitor Expenditures during April	70,543	8,463	30,694	49,668
Day Use Visitor Expenditures during May	123,451	15,869	66,235	109,683
Day Use Visitor Expenditures during June	250,429	27,506	138,932	142,795
Day Use Visitor Expenditures during July	363,298	37,027	134,086	155,212
Day Use Visitor Expenditures during August	338,608	34,911	156,703	161,421
Day Use Visitor Expenditures during September	155,195	17,985	69,466	105,544
Day Use Visitor Expenditures during October	56,435	11,637	33,925	60,015
Day Use Visitor Expenditures during Other Months	74,071	3,174	3,231	22,764
Annual Day Use Visitor Expenditures	\$1,432,030	\$156,571	\$633,273	\$807,104

Table 7.6-26. Annual Day Use Visitor Expenditures by Category by Reservoir.

	Donner Lake	Promer Reservoir	Stampede Reservoir	Boca Reservoir
Number of Day Use Respondents	71	8	9	54
Expenditures on Licenses by Day Use Respondents	0.00	142.38	347.40	376.00
Expenditures on Camping Fees by Day Use Respondents	165.64	0.00	0.00	292.80
Expenditures on Hotel or Motel by Day Use Respondents /1	1101.01	6.00	144.00	1317.14
Expenditures on Restaurant by Day Use Respondents	1169.56	250.02	135.00	537.16
Expenditures on Groceries by Day Use Respondents	1510.37	250.02	201.60	1408.56
Expenditures on Equipment and Supplies by Day Use Respondents	351.30	27.00	33.84	230.40
Expenditures on Rental by Day Use Respondents	956.38	975.00	0.00	0.00
Expenditures on Fuel by Day Use Respondents	449.02	119.98	181.80	886.20
Expenditures on Other by Day Use Respondents	323.15	50.00	13.50	292.80
Total Expenditures by Day Use Respondents	\$6,026.43	\$1,820.40	\$1,057.14	\$5,341.06
Expenditures on Licenses by Day Use Respondents	0.00%	7.82%	32.86%	7.04%
Expenditures on Camping Fees by Day Use Respondents	2.75%	0.00%	0.00%	5.48%
Expenditures on Hotel or Motel by Day Use Respondents /1	18.27%	0.33%	13.62%	24.66%
Expenditures on Restaurant by Day Use Respondents	19.41%	13.73%	12.77%	10.06%
Expenditures on Groceries by Day Use Respondents	25.06%	13.73%	19.07%	26.37%
Expenditures on Equipment and Supplies by Day Use Respondents	5.83%	1.48%	3.20%	4.31%
Expenditures on Rental by Day Use Respondents	15.87%	53.56%	0.00%	0.00%
Expenditures on Fuel by Day Use Respondents	7.45%	6.59%	17.20%	16.59%
Expenditures on Other by Day Use Respondents	5.36%	2.75%	1.28%	5.48%
Total Expenditures by Day Use Respondents	100.00%	100.00%	100.00%	100.00%
Annual Day Use Visitor Expenditures on Licenses	0	12,246	208,108	56,819
Annual Day Use Visitor Expenditures on Camping Fees	39,360	0	0	44,246
Annual Day Use Visitor Expenditures on Hotel or Motel /1	261,627	516	86,262	199,037
Annual Day Use Visitor Expenditures on Restaurant	277,917	21,504	80,871	81,172
Annual Day Use Visitor Expenditures on Groceries	358,902	21,504	120,767	212,852
Annual Day Use Visitor Expenditures on Equipment and Supplies	83,478	2,322	20,272	34,816
Annual Day Use Visitor Expenditures on Rental	227,260	83,859	0	0
Annual Day Use Visitor Expenditures on Fuel	106,698	10,319	108,906	133,916
Annual Day Use Visitor Expenditures on Other	76,789	4,300	8,087	44,246
Annual Day Use Visitor Expenditures	\$1,432,030	\$156,571	\$633,273	\$807,104

1. Expenditures on hotel or motel include vacation-home rent expenditures.

### Annual Number of Camping and Day Use Visitors

The annual number of camping and day use visitors by reservoir is the summation of the annual number of camping visitors and the annual number of day use visitors. This is done through the following equations.

$$AG_{it} = K_{it} + T_{it} \quad (7.6-22)$$

$$AH_i = \sum AG_{it} \quad (7.6-23)$$

where:

$AG_{it}$	is the annual number of camping and day use visitors for reservoir i in month t
$K_{it}$	is the number of annual camping visitors to reservoir i in month t
$T_{it}$	is the number of annual day use visitors to reservoir i in month t
$AH_i$	is the annual number of camping and day use visitors for reservoir i

The annual number of camping and day use visitors by month by reservoir are shown in Table 7.6-27.



**Table 7.6-27. Annual Number of Camping and Day Use Visitors by Month by Reservoir.**

	<b>Donner Lake</b>	<b>Prosser Reservoir</b>	<b>Stampede Reservoir</b>	<b>Boon Reservoir</b>
Number of Camping and Day Use Visitors during April	16,421	2,822	13,790	9,154
Number of Camping and Day Use Visitors during May	28,737	5,291	29,758	20,215
Number of Camping and Day Use Visitors during June	58,294	9,170	62,419	26,318
Number of Camping and Day Use Visitors during July	84,568	12,345	60,242	28,607
Number of Camping and Day Use Visitors during August	78,820	11,639	70,403	29,751
Number of Camping and Day Use Visitors during September	36,126	5,996	31,210	19,452
Number of Camping and Day Use Visitors during October	13,137	3,880	15,242	11,061
Number of Camping and Day Use Visitors during Other months	17,242	1,058	1,452	4,196
<b>Annual Number of Camping and Day Use Visitors</b>	<b>333,345</b>	<b>52,200</b>	<b>284,515</b>	<b>148,754</b>

### Annual Camping and Day Use Visitor Expenditures

The annual camping and day use visitor expenditures by reservoir is the summation of the annual camping visitor expenditures and the annual day use visitor expenditures. This is done through the following equations.

$$AI_{it} = W_{it} + AB_{it} \quad (7.6-24)$$

$$AJ_i = \sum AI_{it} \quad (7.6-25)$$

where:

$AI_{it}$	is the annual camping and day use visitor expenditures for reservoir i in month t
$W_{it}$	is the annual camping visitor expenditures for reservoir i in month t
$AB_{it}$	is the annual day use visitor expenditures for reservoir i in month t
$AJ_i$	is the annual camping and day use visitor expenditures for reservoir i

The annual camping and day use visitor expenditures by month by reservoir are shown in Table 7.6-28.

**Table 7.6-28. Annual Camping and Day Use Visitor Expenditures by Month by Reservoir.**

	<b>Donner Lake</b>	<b>Prosser Reservoir</b>	<b>Stampede Reservoir</b>	<b>Boon Reservoir</b>
Camping and Day Use Visitor Expenditures during April	138,351	23,753	119,879	76,986
Camping and Day Use Visitor Expenditures during May	242,114	44,537	258,686	170,010
Camping and Day Use Visitor Expenditures during June	491,145	77,197	542,609	221,334
Camping and Day Use Visitor Expenditures during July	712,506	103,919	523,681	240,581
Camping and Day Use Visitor Expenditures during August	664,084	97,981	612,013	250,204
Camping and Day Use Visitor Expenditures during September	304,372	50,475	271,305	163,595
Camping and Day Use Visitor Expenditures during October	110,681	32,660	132,498	93,025
Camping and Day Use Visitor Expenditures during Other months	145,268	8,907	12,619	35,285
<b>Annual Camping and Day Use Visitor Expenditures</b>	<b>\$2,808,521</b>	<b>\$439,431</b>	<b>\$2,473,289</b>	<b>\$1,251,019</b>

### Annual Camping and Day Use Visitor Expenditures by Category

The annual camping and day use visitor expenditures by category by reservoir is the summation of the annual camping visitor expenditures by category and the annual day use visitor expenditures by category. This is done through the following equations.

$$AK_{ci} = Z_{ci} + AE_{ci} \quad (7.6-26)$$

$$AL_i = \sum AK_{ci} \quad (7.6-27)$$

where:

- $AK_{ci}$  is the annual camping and day use visitor expenditures by category c for reservoir i
- $Z_{ci}$  is the annual camping visitor expenditures by category c for reservoir i
- $AE_{ci}$  is the annual day use visitor expenditures by category c for reservoir i
- $AL_i$  is the annual camping and day use visitor expenditures for reservoir i

The annual camping and day use visitor expenditures by category by reservoir are shown in Table 7.6-29.

**Table 7.6-29. Annual Camping and Day Use Visitor Expenditures by Category by Reservoir.**

	<b>Donner Lake</b>	<b>Promer Reservoir</b>	<b>Stampede Reservoir</b>	<b>Boon Reservoir</b>
Annual Camping and Day Use Visitor Expenditures on Licenses	0	12,246	260,786	64,532
Annual Camping and Day Use Visitor Expenditures on Camping Fees	409,510	50,429	417,444	92,343
Annual Camping and Day Use Visitor Expenditures on Hotel or Motel	304,182	516	86,262	223,415
Annual Camping and Day Use Visitor Expenditures on Restaurant	493,198	41,486	187,543	94,473
Annual Camping and Day Use Visitor Expenditures on Groceries	791,743	170,485	700,185	437,820
Annual Camping and Day Use Visitor Expenditures on Equipment and Supplies	83,478	2,322	69,368	34,994
Annual Camping and Day Use Visitor Expenditures on Rental	231,819	83,859	0	339
Annual Camping and Day Use Visitor Expenditures on Fuel	225,091	39,916	372,027	182,609
Annual Camping and Day Use Visitor Expenditures on Other	269,500	38,171	379,675	120,496
<b>Annual Camping and Day Use Visitor Expenditures</b>	<b>\$2,808,521</b>	<b>\$439,431</b>	<b>\$2,473,289</b>	<b>\$1,251,019</b>

## **8. Model Application Improvement**

Model application improvement includes estimation of the economic impacts for alternative reservoir storage levels.

### **8.1. Estimation of the Economic Impacts for Alternative Reservoir Storage Levels**

Estimation of the economic impacts for alternative reservoir storage levels at Donner Lake and at Prosser, Stampede, and Boca Reservoirs is done by integrating the recreation model component with the input-output model component. A direct economic impact is calculated first using the recreation model component. Then second, the total economic impact is calculated using the input-output model component. Third, the response economic impact is also calculated using the input-output model component.

## Direct Economic Impact

The direct economic impact is the expenditures that camping and day use visitors at Donner Lake and at Prosser, Stampede, and Boca Reservoirs make in the regional economy during the year. Expenditures are on licenses, camping fees, hotel or motel, restaurant, groceries, equipment and supplies, rental, fuel, and other items.

Estimation of the direct economic impact is done through the following process. Using the recreation model component, the end of the month reservoir storage levels at Donner Lake and at Prosser, Stampede, and Boca Reservoirs is the input data. In turn, annual number of camping and day use visitors, annual camping and day use visitor expenditures, and, annual camping and day use visitor expenditures by category are calculated for each of the reservoirs. The total expenditures by category for all the reservoirs are then placed into economic sectors to become the direct economic impact. Underlying details of the recreation model component and equations used to calculate annual visitors, annual visitor expenditures, and annual visitor expenditures by category are given in Chapter 7.

### **End of the Month Reservoir Storage Levels**

End of the month reservoir storage levels at Donner Lake and at Prosser, Stampede, and Boca Reservoirs are provided in Table 8.1-1.

End of the month reservoir storage levels for Donner Lake and Prosser, Stampede, and Boca Reservoirs are given for April through October and Other Months. April through October is considered to be the recreation season in a given year. Other Months are January, February, March, November and December of the given year. The reservoir storage levels are taken in total for April through October and as an average for the Other Months.

End of the month reservoir storage levels for Donner Lake and Prosser, Stampede, and Boca Reservoirs also have a set range of storage level. Reservoir storage levels at Donner Lake can range between 5,796 acre-feet and 9,660 acre-feet. Reservoir storage levels at Prosser Reservoir can range between 0 acre-feet and 29,840 acre-feet. Reservoir storage levels at Stampede Reservoir can range between 0 acre-feet and 226,500 acre-feet. Reservoir storage levels at Boca Reservoir can range between 0 acre-feet to 40,870 acre-feet.

### **Annual Number of Camping and Day Use Visitors**

Annual number of camping and day use visitors by month by reservoir are provided in Table 8.1-2.



## **Annual Camping and Day Use Visitor Expenditures**

Annual camping and day use visitor expenditures by month by reservoir are provided in Table 8.1-3.

## **Annual Camping and Day Use Visitor Expenditures by Category**

Annual camping and day use visitor expenditures by category by reservoir are provided in Table 8.1-4.

## **Direct Economic Impact**

The direct economic impact by economic sector is provided in Table 8.1-5. The total expenditures by category for the reservoirs are placed into economic sectors. The direct impact is presented as total direct expenditures.

There are twenty economic sectors within the regional economy. These sectors include livestock production, dairy production, alfalfa hay production, other hay production, barley production, agricultural services, gold mining, other mining, construction, manufacturing, transportation and communications, utilities, trade, eating, drinking, and lodging, finance, insurance, and real estate, services, hotels, gaming, and recreation, health, local government, and households. In addition to these sectors, there is also other final payments and imports.

The trade sector accounts for expenditure categories of groceries, equipment and supplies, fuel, and other. The eating, drinking, and lodging sector accounts for the expenditure categories of hotel or motel, restaurant, and rental. Other final payments account for expenditure categories of camping fees and license fees.

The total direct expenditures are trade, eating, drinking, and lodging sector expenditures, other final payments, and imports. Other final payments and imports are leakage's out of the regional economy. Other final payments are expenditures to the federal and state government. Imports make-up the balance of the marginalized trade sector expenditures. The trade sector expenditures are marginalized to 25% to reflect that only the mark-up value on goods sold remains in the regional economy.

**Table 8.1-1. End of the Month Reservoir Storage Levels.**

Month	Donner Lake <i>acre-feet</i>	Prosser Reservoir <i>acre-feet</i>	Stampede Reservoir <i>acre-feet</i>	Boca Reservoir <i>acre-feet</i>
April	4,930	9,767	80,186	26,763
May	9,300	16,414	113,577	37,473
June	9,600	20,957	166,955	38,557
July	9,420	22,110	177,424	38,084
August	8,880	21,691	174,288	34,582
September	5,300	14,394	172,442	23,927
October	3,150	10,050	170,696	16,419
Other Months Average	3,366	9,854	113,263	9,561
January	3,290	9,827	73,944	5,247
February	3,320	9,723	75,751	4,396
March	4,290	9,642	76,677	2,955
November	2,980	9,981	170,433	17,042
December	2,950	10,098	169,510	18,163

**Table 8.1-2. Annual Number of Camping and Day Use Visitors by Month by Reservoir.**

Month	Donner Lake <i>visitors</i>	Prosser Reservoir <i>visitors</i>	Stampede Reservoir <i>visitors</i>	Boca Reservoir <i>visitors</i>	Total <i>visitors</i>
April	16,421	2,822	13,790	9,154	42,187
May	28,737	5,291	29,758	20,215	84,000
June	58,294	9,170	62,419	26,318	156,202
July	84,568	12,345	60,242	28,607	185,761
August	78,820	11,639	70,403	29,751	190,613
September	36,126	5,996	31,210	19,452	92,784
October	13,137	3,880	15,242	11,061	43,320
Other Months	17,242	1,058	1,452	4,196	23,947
Total	333,345	52,200	284,515	148,754	818,814

Table 8.1-3. Annual Camping and Day Use Visitor Expenditures by Month by Reservoir.

Month	Donner Lake \$	Prosser Reservoir \$	Stampede Reservoir \$	Boca Reservoir \$	Total \$
April	138,351	23,753	119,879	76,986	358,968
May	242,114	44,537	258,686	170,010	715,347
June	491,145	77,197	542,609	221,334	1,332,286
July	712,506	103,919	523,681	240,581	1,580,688
August	664,084	97,981	612,013	250,204	1,624,282
September	304,372	50,475	271,305	163,595	789,746
October	110,681	32,660	132,498	93,025	368,863
Other Months	145,268	8,907	12,619	35,285	202,080
Total	2,808,521	439,431	2,473,289	1,251,019	6,972,260

Table 8.1-4. Annual Camping and Day Use Visitor Expenditures by Category by Reservoir.

Category	Donner Lake \$	Prosser Reservoir \$	Stampede Reservoir \$	Boca Reservoir \$	Total \$
Licenses	0	12,246	260,786	64,532	337,563
Camping Fees	409,510	50,429	417,444	92,343	969,725
Hotel or Motel	304,182	516	86,262	223,415	614,376
Restaurant	493,198	41,486	187,543	94,473	816,699
Groceries	791,743	170,485	700,185	437,820	2,100,233
Equipment and Supplies	83,478	2,322	69,368	34,994	190,162
Rental	231,819	83,859	0	339	316,017
Fuel	225,091	39,916	372,027	182,609	819,643
Other	269,500	38,171	379,675	120,496	807,842
Total	2,808,521	439,431	2,473,289	1,251,019	6,972,260

**Table 8.1-5. Direct Economic Impact by Economic Sector.**

<b>Economic Sector</b>	<b>Total Direct Expenditures \$</b>
1 Livestock Production	0
2 Dairy Production	0
3 Alfalfa Hay Production	0
4 Other Hay Production	0
5 Barley Production	0
6 Agricultural Services	0
7 Gold Mining	0
8 Other Mining	0
9 Construction	0
10 Manufacturing	0
11 Transportation and Communications	0
12 Utilities	0
13 Trade	999,059
14 Eating, Drinking, and Lodging	1,747,092
15 Finance, Insurance, and Real Estate	0
16 Services	0
17 Hotels, Gaming, and Recreation	0
18 Health	0
19 Local Government	0
20 Households	0
Other Final Payments	1,307,288
Imports	2,918,820
<b>Total</b>	<b>6,972,260</b>

## Total Economic Impact

The total economic impact is the total amount of economic activity in terms of output generated from the direct economic impact.

The total economic impact includes the direct economic impact plus indirect and induced economic impacts. The direct economic impact is the expenditures accounted for in the trade, and, eating, drinking, and lodging sectors. The indirect economic impact is the additional impact that occurs due to linkages that the trade, and, eating, drinking, and lodging sectors have with each other and with the other economic sectors in the regional economy, except for local government and households sectors. The induced economic impact is the additional impact that occurs due to linkages that the trade, and, eating, drinking, and lodging sectors have with the local government and households sectors.

Estimation of the total economic impact is done through the following process. The direct economic impact by economic sector is the input data. In turn, using the input-output model component, the direct economic impact by economic sector is post-multiplied by the output requirements to become the total economic impact. Underlying details of the input-output model component and output requirements are given in Chapter 4.

## Total Economic Impact

The total economic impact by economic sector is provided in Table 8.1-6. The total economic impact is presented as total output and adjusted output. The adjusted output is net of agriculture production and mining sectors. The reason for this is because the agriculture production and mining sectors have a fixed resource base.

Table 8.1-6. Total Economic Impact by Economic Sector.

Economic Sector	Total Output \$	Adjusted /1 Output \$
1 Livestock Production	246	0
2 Dairy Production	66	0
3 Alfalfa Hay Production	39	0
4 Other Hay Production	63	0
5 Barley Production	4	0
6 Agricultural Services	1,497	1,497
7 Gold Mining	165	0
8 Other Mining	219	0
9 Construction	63,777	63,777
10 Manufacturing	97,302	97,302
11 Transportation and Communications	85,042	85,042
12 Utilities	157,939	157,939
13 Trade	1,171,681	1,171,681
14 Eating, Drinking, and Lodging	1,776,923	1,776,923
15 Finance, Insurance, and Real Estate	283,643	283,643
16 Services	293,234	293,234
17 Hotels, Gaming, and Recreation	46,661	46,661
18 Health	98,173	98,173
19 Local Government	77,282	77,282
20 Households	1,504,461	1,502,805
Other Final Payments	1,307,288	1,307,288
Imports	2,918,820	2,918,820
Total	9,884,525	9,882,066

1. Adjusted output is net of agriculture production and mining sectors.

## Response Economic Impact

The response economic impact includes the employment response, income response, population response, housing response, agriculture water use response, commercial water use response, and residential water use response to the total economic impact.

Estimation of the response economic impact is done through the following process. The total economic impact by economic sector is the input data. In turn, using the input-output model component, the total economic impact by economic sector is multiplied by the output response coefficients by economic sector to become the response economic impact. Output response coefficients are given for employment, income, population, housing, agriculture water use, commercial water use, and residential water use. Underlying details of the input-output model component and output response coefficients are given in Chapter 4.

### Employment Response

Employment response by economic sector is provided in Table 8.1-7. Employment is measured as jobs.

### Income Response

Income response by economic sector is provided in Table 8.1-8. Income is measured in dollars.

### Population Response

Population response by economic sector is provided in Table 8.1-9. Population is measured as all persons.

### Housing Response

Housing response by economic sector is provided in Table 8.1-10. Housing is measured as dwellings.

### **Agriculture Water Use Response**

Agriculture water use response by economic sector is provided in Table 8.1-11. Agriculture water use is measured in acre-feet.

### **Commercial Water Use Response**

Commercial water use response by economic sector is provided in Table 8.1-12. Commercial water use is measured in acre-feet and in gallons.

### **Residential Water Use Response**

Residential water use response by economic sector is provided in Table 8.1-13. Residential water use is measured in acre-feet and in gallons.



**Table 8.1-7. Employment Response by Economic Sector.**

<b>Economic Sector</b>	<b>Employment jobs</b>
1 Livestock Production	0
2 Dairy Production	0
3 Alfalfa Hay Production	0
4 Other Hay Production	0
5 Barley Production	0
6 Agricultural Services	0
7 Gold Mining	0
8 Other Mining	0
9 Construction	1
10 Manufacturing	1
11 Transportation and Communications	1
12 Utilities	1
13 Trade	30
14 Eating, Drinking, and Lodging	33
15 Finance, Insurance, and Real Estate	3
16 Services	8
17 Hotels, Gaming, and Recreation	1
18 Health	3
19 Local Government	1
20 Households	0
<b>Total</b>	<b>83</b>

**Table 8.1-8. Income Response by Economic Sector.**

<b>Economic Sector</b>	<b>Income \$</b>
1 Livestock Production	0
2 Dairy Production	0
3 Alfalfa Hay Production	0
4 Other Hay Production	0
5 Barley Production	0
6 Agricultural Services	633
7 Gold Mining	0
8 Other Mining	0
9 Construction	18,403
10 Manufacturing	25,658
11 Transportation and Communications	34,105
12 Utilities	19,812
13 Trade	570,492
14 Eating, Drinking, and Lodging	592,885
15 Finance, Insurance, and Real Estate	39,346
16 Services	116,271
17 Hotels, Gaming, and Recreation	15,062
18 Health	41,460
19 Local Government	28,678
20 Households	0
<b>Total</b>	<b>1,502,805</b>

**Table 8.1-9. Population Response by Economic Sector.**

<b>Economic Sector</b>	<b>Population <i>all persons</i></b>
1 Livestock Production	0
2 Dairy Production	0
3 Alfalfa Hay Production	0
4 Other Hay Production	0
5 Barley Production	0
6 Agricultural Services	0
7 Gold Mining	0
8 Other Mining	0
9 Construction	1
10 Manufacturing	1
11 Transportation and Communications	2
12 Utilities	2
13 Trade	48
14 Eating, Drinking, and Lodging	60
15 Finance, Insurance, and Real Estate	5
16 Services	14
17 Hotels, Gaming, and Recreation	1
18 Health	5
19 Local Government	2
20 Households	0
<b>Total</b>	<b>141</b>

**Table 8.1-10. Housing Response by Economic Sector.**

<b>Economic Sector</b>	<b>Housing dwellings</b>
1 Livestock Production	0
2 Dairy Production	0
3 Alfalfa Hay Production	0
4 Other Hay Production	0
5 Barley Production	0
6 Agricultural Services	0
7 Gold Mining	0
8 Other Mining	0
9 Construction	0
10 Manufacturing	1
11 Transportation and Communications	1
12 Utilities	1
13 Trade	19
14 Eating, Drinking, and Lodging	24
15 Finance, Insurance, and Real Estate	2
16 Services	5
17 Hotels, Gaming, and Recreation	1
18 Health	2
19 Local Government	1
20 Households	0
<b>Total</b>	<b>56</b>

**Table 8.1-11. Agriculture Water Use Response by Economic Sector.**

<b>Economic Sector</b>	<b>Agriculture Water Use <i>acre-feet</i></b>
1 Livestock Production	0
2 Dairy Production	0
3 Alfalfa Hay Production	0
4 Other Hay Production	0
5 Barley Production	0
6 Agricultural Services	0
7 Gold Mining	0
8 Other Mining	0
9 Construction	0
10 Manufacturing	0
11 Transportation and Communications	0
12 Utilities	0
13 Trade	0
14 Eating, Drinking, and Lodging	0
15 Finance, Insurance, and Real Estate	0
16 Services	0
17 Hotels, Gaming, and Recreation	0
18 Health	0
19 Local Government	0
20 Households	0
<b>Total</b>	<b>0</b>

**Table 8.1-12. Commercial Water Use Response by Economic Sector.**

<b>Economic Sector</b>	<b>Commercial Water Use <i>acre-feet</i></b>	<b>Commercial Water Use <i>gallons</i></b>
1 Livestock Production	0	0
2 Dairy Production	0	0
3 Alfalfa Hay Production	0	0
4 Other Hay Production	0	0
5 Barley Production	0	0
6 Agricultural Services	0	597
7 Gold Mining	0	0
8 Other Mining	0	0
9 Construction	0	3,451
10 Manufacturing	0	10,510
11 Transportation and Communications	0	10,475
12 Utilities	0	73,685
13 Trade	1	356,700
14 Eating, Drinking, and Lodging	4	1,175,906
15 Finance, Insurance, and Real Estate	0	22,834
16 Services	0	155,328
17 Hotels, Gaming, and Recreation	0	51,227
18 Health	0	78,985
19 Local Government	0	10,833
20 Households	0	0
<b>Total</b>	<b>6</b>	<b>1,950,531</b>

Table 8.1-13. Residential Water Use Response by Economic Sector.

Economic Sector	Residential /1 Water Use acre-feet	Residential /1 Water Use gallons
1 Livestock Production	0	0
2 Dairy Production	0	0
3 Alfalfa Hay Production	0	0
4 Other Hay Production	0	0
5 Barley Production	0	0
6 Agricultural Services	0	4,845
7 Gold Mining	0	0
8 Other Mining	0	0
9 Construction	0	73,740
10 Manufacturing	0	101,904
11 Transportation and Communications	0	123,089
12 Utilities	0	120,173
13 Trade	11	3,669,959
14 Eating, Drinking, and Lodging	14	4,552,507
15 Finance, Insurance, and Real Estate	1	408,338
16 Services	3	1,055,622
17 Hotels, Gaming, and Recreation	0	107,290
18 Health	1	359,600
19 Local Government	1	175,482
20 Households	0	0
Total	33	10,752,548

1. Residential water use is non-metered residential water use.

## Summary

A summary is provided in Table 8.1-14. This summary includes average end of the month reservoir storage for the reservoirs, camping and day use visitors for the reservoirs, direct economic impact, total economic impact, employment response, income response, population response, housing response, agriculture water use response, commercial water use response, residential water use response, and a recreation expenditure multiplier.



Table 8.1-14. Summary.

Donner Lake Average End of the Month Reservoir Storage	6,743 <i>acre-feet</i>
Prosser Reservoir Average End of the Month Reservoir Storage	15,655 <i>acre-feet</i>
Stampede Reservoir Average End of the Month Reservoir Storage	146,104 <i>acre-feet</i>
Boca Reservoir Average End of the Month Reservoir Storage	28,171 <i>acre-feet</i>
Donner Lake Camping and Day Use Visitors	333,345 <i>visitors</i>
Prosser Reservoir Camping and Day Use Visitors	52,200 <i>visitors</i>
Stampede Reservoir Camping and Day Use Visitors	284,515 <i>visitors</i>
Boca Reservoir Camping and Day Use Visitors	148,754 <i>visitors</i>
Direct Economic Impact	6,972,260 <i>\$s of expenditure</i>
Total Economic Impact	9,882,066 <i>\$s of output</i>
Employment Response	83 <i>jobs</i>
Income Response	1,502,805 <i>\$s of income</i>
Population Response	141 <i>all persons</i>
Housing Response	56 <i>dwellings</i>
Agriculture Water Use Response	0 <i>acre-feet</i>
Commercial Water Use Response	6 <i>acre-feet</i>
Residential Water Use Response /1	33 <i>acre-feet</i>
Recreation Expenditure Multiplier /2	1.41734047

1. Residential water use is non-motered residential water use.

2. Recreation expenditure multiplier is a ratio multiplier. The recreation expenditure multiplier is the total economic impact to direct economic impact.  
Multiplier interpretation: a \$1 expenditure creates an additional \$1.42 in economic activity.

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